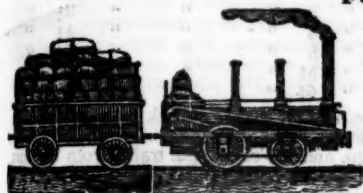


AMERICAN RAILROAD JOURNAL, AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY,

AND MINES.

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SATURDAY, MAY 16, 1846.

[WHOLE No. 516, VOL. XIX.

BOSTON AND PROVIDENCE RAILROAD.

Passenger Notice: Summer Arrangement. On and after Monday, April 6, 1846, the Passenger Trains will run as follows:

For New York—Night Line, via Stonington. Leaves Boston every day, but Sunday, at 5 p.m.

Accommodation Trains, leave Boston at 7½ a.m. and 4 p.m., and Providence at 8 a.m. and 4½ p.m.

Dedham trains, leave Boston at 8 a.m. 12½ m., 3½ p.m., and 6½ p.m. Leave Dedham at 7 a.m. and 9½ a.m. and 2½ and 5½ p.m.

Stoughton trains, leave Boston at 11½ a.m. and 5½ p.m. Leave Stoughton at 7-20 a.m. and 3½ p.m. All baggage at the risk of the owners thereof.

W. RAYMOND LEE, Sup't.

BRANCH RAILROAD AND STAGES CONNECTING WITH THE BOSTON AND PROVIDENCE RAILROAD.

Stages connect with the Accommodation trains at the Foxboro' Station, to and from Woonsocket. At the Seekonk Station, to and from Lonsdale, R. I. via Pawtucket. At the Sharon Station, to and from Walpole, Mass. And at Dedham Village Station, to and from Medford, via Medway, Mass. At Providence, to and from Bristol, via Warren, R. I.—Taunton, New Bedford and Fall River cars run in connection with the accommodation trains.

NORWICH AND WORCESTER RAILROAD.

Summer Arrangement, commencing Monday, April 6, 1846.

Accommodation Trains, daily, except Sunday. Leave Norwich, at 6 a.m., and 4½ p.m. Leave Worcester, at 10 a.m., and 4½ p.m.

The morning Accommodation Trains from Norwich, and from Worcester, connect with the trains of the Boston, and Worcester and Western railroads each way.

The Evening Accommodation Train from Worcester connects with the 1½ p.m. train from Boston.

New York Train via Long Island Railroad: Leave Allyn's Point for Boston, about 1 p.m., daily, except Sunday.

Leave Worcester for New York, about 10 a.m., stopping at Webster, Danielsonville, and Norwich.

New York Train via Steamboat—Leave Norwich for Boston, every morning, except Monday, on the arrival of the steamboat from New York, stopping at Norwich and Danielsonville.

Leave Worcester for New York, upon the arrival of the train from Boston, at about 4½ p.m., daily, except Sunday, stopping at Webster, Danielsonville and Norwich.

Freight Trains daily each way, except Sunday. Special contracts will be made for cargoes, or large quantities of freight, on application to the superintendent.

Fares are Less when paid for Tickets than when paid in the Cars.

J. W. STOWELL, Sup't.

BOSTON AND MAINE RAILROAD.

Upper Route, Boston to Portland via, Reading, Andover, Haverhill, Exeter, Dover, Great Falls, South & North Berwick, Wells, Kennebunk and Saco.

Summer Arrangement, 1846.

On and after April 13, 1846, Passenger Trains will leave daily, (Sundays excepted,) as follows:

Boston for Portland at 7½ a.m. and 2½ p.m.

Boston for Great Falls at 7½ a.m., 2½ and 4½ p.m.

Boston for Haverhill at 7½ and 11½ a.m., 2½, 4½ and 6 p.m.

Boston for Reading at 7½, 9, and 11½ a.m., 2½, 4½, 6 and 8 p.m.

Portland for Boston at 7½ a.m., and 3 p.m.

Great Falls for Boston at 6½ and 9½ a.m., and 4½ p.m.

Haverhill for Boston at 6½, 8½, and 11 a.m., and 4 and 6½ p.m.

Reading for Boston at 6½, 7½ and 9½ a.m., 12 m., 1½, 5 and 7½ p.m.

The Depot in Boston is on Haymarket Square.

Passengers are not allowed to carry Baggage above \$50 in value, and that personal Baggage, unless notice is given, and an extra amount paid, at the rate of the price of a Ticket for every \$500 additional value.

CHAS. MINOT, Sup't.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO OOTHICALOGA, 80 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 388 miles in length, from Charleston to Oothicaloga on the Oostenanla River, in Cass Co., Georgia.

Rates of Freight, and Passage from Augusta to Oothicaloga.

On Boxes of Hats, Bonnets, and Furniture

per foot.....16 cts.

" Dry goods, shoes, saddlery, drugs, etc., per 100 lbs.....95 "

" Sugar, coffee, iron, hardware, etc.....65 "

" Flour, bacon, mill machinery, grindstones, etc.....33½ "

" Molasses, per hogshead \$9-50; salt per bus. 20 "

" Ploughs and cornshellers, each.....75 "

Passengers \$10-50; children under 12 years of age half price.

Passengers to Atlanta, head of Ga. Railroad, \$7. German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight may be paid at Augusta, Atlanta, or Oothicaloga.

J. EDGAR THOMSON,

CA. Eng. and Gen. Agent.

Augusta, Oct. 21 1845.

+44 1y

SUMMER ARRANGEMENT.—NEW YORK AND ERIE RAILROAD LINE, from April 1st until further notice, will

run daily (Sundays excepted) between the city of New York and Middletown, Goshen, and intermediate places, as follows:

FOR PASSENGERS—

Leave New York at 7 A.M. and 4 P.M.

" Middletown at 6½ A.M. and 5½ P.M.

FARE REDUCED to \$1 25 to Middletown—way in proportion. Breakfast, supper and berths can be had on the steamboat.

FOR FREIGHT—

Leave New York at 5 P.M.

" Middletown at 12 M.

The names of the consignee and of the station where to be left, must be distinctly marked upon each article shipped. Freight not received after 5 P.M. in New York.

Apply to J. F. Clarkson, agent, at office corner of Duane and West sts.

H. C. SEYMOUR, Sup't.

March 25th, 1846.

Stages run daily from Middletown, on the arrival of the afternoon train, to Milford, Carbondale, Honesdale, Montrose, Towanda, Owego, and West; also to Monticello, Windsor, Binghamton, Ithaca, etc., etc. Agent on board.

13th

BALTIMORE AND OHIO RAILROAD.

MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7½ and

Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P.M. Fare between those points \$7, and 4 cents per mile for less distances. Fare through to Wheeling \$11 and time about 36 hours, to Pittsburgh \$10, and time about 32 hours. Through tickets from Philadelphia to Wheeling \$13, to Pittsburgh \$12. Extra train daily except Sundays from Baltimore to Frederick at 4 P.M., and from Frederick to Baltimore at 8 A.M.

WASHINGTON BRANCH.

Daily trains at 9 A.M. and 5 P.M. and 12 at night from Baltimore and at 6 A.M. and 5½ P.M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare \$1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances.

s13y1

BALTIMORE AND SUSQUEHANNA
Railroad. The Passenger train runs daily except Sunday, as follows:

Leaves Baltimore at 9 a.m., and arrives at 6 p.m. Arrives at York at 12 p.m., and leaves for Columbia at 1 p.m. Leaves Columbia at 2 p.m., and leaves York for Baltimore at 3 p.m. Fare to York \$2. Wrightsville \$2 50, and Columbia \$2 62½. The train connects at York with stages for Harrisburg, Gettysburg, Chambersburg, Pittsburg and York Springs.

Fare to Pittsburg. The company is authorized by the proprietors of Passenger lines on the Pennsylvania improvements, to receive the fare for the whole distance from Baltimore to Pittsburg. Baltimore to Pittsburg.—Fare through, \$9 and \$10.

Afternoon train. This train leaves the ticket office daily, Sundays excepted, at 3½ p.m. for Cockeysville, Parkton, Green Springs, Owings' Mills, etc.

Returning, leaves Parkton at 6 and Cockeysville and Owings' Mills at 7, arriving in Baltimore at 9 o'clock a.m.

Tickets for the round trip to and from any point can be procured from the agents at the ticket offices or from the conductors in the cars. The fare when tickets are thus procured, will be 25 per cent. less, and the tickets will be good for the same and following day any passenger train.

D. C. H. BORDLEY, Sup't.
Ticket Office, 63 North st.

CENTRAL RAILROAD-FROM SAVANNAH
to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers and Freight.

Rates of Passage, \$8 00. Freight—On weight goods generally... 50 cts. per hundred.

On measurement goods... 13 cts. per cubic ft. On brls. wet (except molasses and oil).....\$1 50 per barrel.

On brls. dry (except lime)... 80 cts. per barrel.

On iron in pigs or bars, castings for mills, and unboxed machinery..... 40 cts. per hundred.

On hhd. and pipes of liquor, not over 120 gallons.....\$5 00 per hhd.

On molasses and oil.....\$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE,
Gen'l. Sup't. Transportation.

NEW YORK & HARLEM RAILROAD
CO.—Summer Arrangement.

On and after Friday, May 1st, 1846, the cars will run as follows:

Leave City Hall for Yorkville, Harlem and Morrianna, at 7, 8, 9, 10 and 11 a. m., and at 1, 2, 3, 30, 4, 30, 5, 6, and 6 30 p. m.

Leave City Hall for Fordham and Williams' Bridge, at 7, 10 and 11 a. m., and at 2, 3, 30, 5, and 6 30 p. m.

Leave City Hall for Hunt's Bridge, Bronx, Tuckahoe, Hart's Corners and White Plains, at 7 and 10 a. m., and at 2 and 5 p. m.

Leave Harlem and Yorkville, at 7 10, 8 10, 9 10, 11 10 a. m., and at 12 40, 2, 3 10, 5 10, 5 30, 6 10, and 7 p. m.

Leave Williams' Bridge and Fordham, at 6 45, 7 45, and 10 45 a. m., and at 12 15, 2 45, 4 45, and 5 45 p. m.

Leave White Plains, at 7 and 10 a. m., and at 2 and 5 p. m.

The freight train will leave the City Hall at 1 o'clock, p. m., and leave White Plains at 1 o'clock in the morning.

On Sundays, the White Plains train will leave the City Hall at 7 a. m. and 5 30 p. m.; will leave White Plains at 7 a. m. and 6 p. m.

On Sundays, the Harlem and Williams' Bridge trains will be regulated according to the state of the weather.

RAILROAD IRON.—THE "MONTGOMERY"
Iron Company, Danville, Pa., is prepared to execute orders for the heavy Rail Bars of any pattern now in use, in this country or in Europe, and equal in every respect in point of quality. Apply to

MURDOCK, LEAVITT & CO.,
Agents.

Corner of Cedar and Greenwich Sts.

LITTLE MIAMI RAILROAD.—1846.—
Summer Arrangement.

Two passenger trains daily. On and after Tuesday, May 6th, further notice, two passenger trains will be run—leaving Cincinnati daily (Sundays excepted) at 9 a. m. and 1½ p. m. Returning, will leave Xenia at 5 o'clock 50 min. a. m., and 2 o'clock 40 min. p. m.

On Sundays, but one train will be run—leaving Cincinnati at 9, and Xenia at 5 50 min. a. m.

Both trains connect with Neil, Moore & Co.'s daily line of stages to Columbus, Zanesville, Wheeling, Cleveland, Sandusky City and Springfield.

Tickets may be procured at the depot on East Front street.

The company will not be responsible for baggage beyond fifty dollars in value, unless the same is returned to the conductor or agent, and freight paid at the rate of a passage for every \$500 in value above that amount.

W. H. CLEMENT,
Superintendent.

CALIGRAPHIC BLACK LEAD PENCIL
Manufactured by E. Wolff and Son, 23 Church Street, Spitalfields, London.

The Caligraphic Pencils have been invented by E. Wolff and Son, after the expenditure of much time and labor. They are the result of many experiments; and every effort that ingenuity and experience could suggest, has been made to insure the highest degree of excellence, and the profession may rely upon their being all that can be desired.

They are perfectly free from grit; and for richness of tone, depth of color, delicacy of tint, and evenness of texture, they are not to be equalled by the best Cumberland Lead that can be obtained at the present time, and are infinitely superior to every other description of Pencil now in use.

The Caligraphic Pencils will also recommend themselves to all who use the Black Lead Pencils as an instrument of professional importance or recreation, by their being little more than half the price of other pencils.

An allowance will be made on every groce purchased by Artists or Teachers.

May be had of all Artists, Colourmen, Stationers, Booksellers, etc.

A single pencil will be forwarded as a sample, upon the receipt of postage stamps to the amount.

Caution.—To prevent imposition, a highly finished and embossed protection wrapper, difficult of imitation, is put around each dozen of Pencils. Each Pencil will be stamped on both sides, "Caligraphic Black Lead, E. Wolff and Son, London."

The subscriber has on hand a full supply of Wolff and Sons celebrated Creta Loevis, or Colored Drawing Chalks, also their pure Cumberland Lead and extra prepared Lead Pencils, and Mathematical Lead Pencils.

P. A. MESIER,
Stationer and Sole Agent,
No. 49 Wall Street.

N. B.—A complete assortment of Steven's Geni-ine Inks, Fluids, Imitating Wood stains, and Graining Colours at the Manufacturers prices.

KEARNEY FIRE BRICK. F. W. BRINLEY
Manufacturer, Perth Amboy, N. J. Guaranteed equal to any, either domestic or foreign. Any shape or size made to order. Terms, 4 mos. from delivery of brick on board. Refer to

James P. Allaire, }
Peter Cooper, } New York.
Murdoch, Leavitt & Co. }
J. Triplett & Son, Richmond, Va.
J. R. Anderson, Tredegar Iron Works, Richmond, Va.

J. Patton, Jr. } Philadelphia, Pa.
Colwell & Co. }
J. M. L. & W. H. Scovill, Waterbury, Con.

N. E. Screw Co. } Providence, R. I.
Eagle Screw Co. }
William Parker, Supt. Bost. and Worc. R. R.
New Jersey Malleable Iron Co., Newark, N. J.
Gardiner, Harrison & Co. Newark, N. J.

25,000 to 30,000 made weekly.

35 ly

FLAT BAR, ENGLISH ROLLED, RAIL
road Iron, 2½ x 4—a large part suitable to relay. For sale by

C. J. F. BINNEY,
Commission Merchant, 1 City Wharf,
Boston, Mass.

11 lm

TROY AND GREENBUSH RAILROAD.
Spring Arrangement. Trains will be run on

this Road as follows, until further notice, Sundays excepted.

Leave Troy at 6½ A.M. Leave Albany at 7 A.M.

" " 7½ " " " 8 " "

" " 8½ " " " 9 " "

" " 9½ " " " 10 " "

" " 10½ " " " 11 " "

" " 11½ " " " 12 M. "

" " 1 P.M. " " 1½ P.M. "

" " 2 " " " 2½ " "

" " 3 " " " 3½ " "

" " 4 " " " 4½ " "

" " 5 " " " 5½ " "

" " 6 " " " 6½ " "

" " 6½ " " " 7 " "

The 6½ a.m. and 2 o'clock p.m. runs from Troy, to Boston runs.

The 12 m. and 6 o'clock p.m. trains from Boston runs.

Passengers from Albany will leave in the Boston Ferry Boat at the foot of Maiden Lane, which starts promptly at the time above advertised.

Passengers will be taken and left at the principal Hotels in River Street, in Troy, and at the Nail Works and Bath Ferry.

L. R. SARGENT,
Superintendent.

Troy, April 1st, 1846.

14 ly

MACHINE WORKS OF ROGERS,
Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work. Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
a45 Paterson, N. J., or 60 Wall street, N. York.

TO RAILROAD COMPANIES AND MANUFACTURERS
of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa.

THE SUBSCRIBERS, AGENTS FOR
the sale of

Codorus, }
Glendon, } Pig Iron.
Spring Mill and }
Valley, }

Have now a supply, and respectfully solicit the patronage of persons engaged in the making of Machinery, for which purpose the above makes of Pig Iron are particularly adapted.

They are also sole Agents for Watson's celebrated Fire Bricks and prepared Kaolin or Fire Clay, orders for which are promptly supplied.

SAM'L KIMBER, & CO.,
59 North Wharves,
Philadelphia, Pa.

Jan. 14, 1846. [1y4]

Amalgamation of Railways and the Atmospheric.

We are often amused at the free and independent tone of discussion adopted by the able editor of *Herald's Railway Journal*; and, though we do not always coincide with him in opinion, we read his strictures with both pleasure and profit, and as often give place to those in opposition to, as in accordance with our own views, that our readers may have the advantage of his investigations and suggestions.—The particular remarks to which we now allude are upon the policy of "amalgamation," or bringing several railways under one management, and the "Atmospheric railway," or principle of propulsion, which we find in the number of 28th March.

Upon both of these important questions the editor early recorded his disapproval, and neither of them has thus far gained his favor—as our readers will perceive by the remarks above alluded to. He says:

"We have long been desirous to see more limits put to the extensive amalgamations going on with companies. It will be remembered that we raised our voice against amalgamations years ago, but we were borne down in that by the all but unanimous voice of the country. An amalgamating fever had come over shareholders, and after several vain and fruitless combats, we gave up the contest. It affords us however, satisfaction to find that our views were then right—that these gigantic unions have at length attracted the attention of a power capable of dealing with them.

Amalgamations were at first instituted on the supposition that the working expenses would be naturally lessened. In certain cases of small lines and of particular branches that is so, but it is not a fact when a line exceeds about 100 miles, as we years ago pointed out. An engine generally runs about 50 miles out, and 50 miles home. It is so on the London and Birmingham, Great Western, and Grand Junction. Wolverton, Swindon, and Crewe are about the middle of these lines, and are placed there from the results of their experience. There their locomotive depots are, at which all making, repairs, etc., are executed. The London and Birmingham early saw the necessity of a central point for their locomotive staff. The Great Western for some time had theirs at the London end, and the Grand Junction at the Liverpool.—But though the latter line is only 97 miles, and Liverpool, from being a port, and so near the manufacturing districts, had superior conveniences, they gave up their large establishment there, and removed to the little village of Crewe. The object was to have their locomotives at a more central point, in case of accident. The Great Western have shops at Bristol, where a fresh engine goes on to Exeter. Every one knows that nothing but necessity would induce companies to have their head establishment distant from their principal offices. That necessity determines all lines, above 70 or 80 miles, at whatever inconvenience, to fix their locomotive head quarters about the middle of the line. The object, as we have said, is economy and centralization of power, in case of accidents. If that were not the case, would the Midland have their locomotive establishment at Derby, rather than at Birmingham, the focus of iron man-

ufactures? The companies have indeed themselves pointed out, that 100 miles or thereabouts are sufficient for one length of line; and there is no economy in a greater length, except in the insignificant fraction of expense of management. That indeed is not generally true, as has been proved by the London and Birmingham, themselves increasing their number of directors, on account of the increased length of the lines under their control.

We say therefore, that experience has proved that which we years back contended for, namely, that about 100 miles are as much as should be in any one line.

But another reason against extensive lines is the public safety. In all very long lines, the power is very feeble. It is selfevidently impossible for a board of however many directors it consists, to watch over 200 or 300 miles of line with the vigor and promptitude it can over 80 or 100. It is left, and must be left to servants, and they can be but under a very indifferent control, and therefore, very slovenly perform their duties.

A parade is sometimes made about a long line being under one management. Suppose there was a superior power that should tell companies, and enforce by strongest laws, how they shall work together for the public convenience, would not that be far better than a management spread so thinly over a large space as to be feeble and inefficient? We think it would be infinitely better.

But there are other considerations of far more weight, namely, the public welfare.—Englishmen are naturally jealous of too much power being even in the hands of their sovereign. Is it, therefore, proper that a power should be raised up within us by the mere force of wealth to control the government, and of course the country? In the case of Mr. Hudson at Derby, we have seen the facility with which millions can be raised—a facility that our premier cannot equal—and not a question asked for what purpose. If money can be got in this manner, it can be abused. It has been reported, but we hope it is not true, that £30,000 was paid by one company last year for certain influences. Be this so or not, it is time a stop should be put to large amalgamations, which are of no use to the shareholders, and may be converted to very improper purposes against the public weal.

We are a friend to railways in their commercial relations, but we do not want to see them made political ladders of; we do not like to hear of chairmen and secretaries of railways united together in bribery and corruption cases at elections.

What we have said of amalgamations applies also to leases of trunk lines. We think both improper and mischievous, unless when they are necessary branches or short lines.

The first of these amalgamations to any extent was the Midland. That arose from the ridiculous contention of the Midland Counties and Derby Junction, and the erroneous estimate made of the traffic from the population on the North Midland railway.—Mr. Hudson having been fortunately connec-

ted with the North and York Midland, a cheap line, was conceived to be a man who would introduce a more vigorous system of economy and retrenchment, and was therefore with his friends installed into the direction, to the exclusion of the old board. Changes—and great reductions were made, in some cases very just, in others very hard on the old servants, which, aided by a fortunate turn of the times, raised the line from a deplorable plight into prosperity. The amalgamation helped it by putting an end to the mad competition between the Midland Counties and Derby Junction. The success of these measures brought Mr. Hudson, extensions and amalgamation into fashion. The spirits of the Great Western soon saw the advantage to be made of it, and the senseless quarrel between the Grand Junction and the London and Birmingham, owing to the unwise policy of Mr. Moss, chairman of the former company, furnished them with reasons for pushing their line in almost all directions until they have the whole of the west of England and a great portion of Wales under their control. The restless spirit of this company is said to have driven the London and Birmingham and the Grand Junction into an amalgamation—a step, we have heard, that the London and Birmingham would never have desired had it not been as a measure of defence against the encroachments of the Great Western. Profiting by these examples, and on account of their quarrels with Mr. Hudson, the Manchester and Leeds are seeking to extend their arms from Great Grimshy to Lancaster and Fleetwood, that is, from the German ocean to the Irish sea. All the canals are brought up by them, and they have now only to get possession of the Sheffield and Manchester railway—which object they have once attempted—to have within their own grasp the entire traffic of the country, comprehending both body and soul of the manufacturing districts.

Mr. Hudson's dominions, now he has the Eastern Counties, extend from London and Bristol to Edinburgh, with branches to the right and left, and comprise a capital little short, we expect, of 50 millions. The London and Birmingham united capital has been estimated at 30,000,000, and its control extends from London to Manchester, Liverpool, and Holyhead; the Great Western capital is about the same as the London and Birmingham, and its dominions reach from London to the extremities of Wales and the Land's End. What the Manchester and Leeds capital is altogether, we hardly know. It is short of the others, no doubt; but what it wants in that is amply made up in the importance and value of the districts they have at their mercy.

Thus our country is divided into four parts, and our locomotion subject to the control of four great powers, with a united capital little, if anything short, when all the projects are completed, of 110 to 120 millions of money. Is this a proper state of things? Ought such an oligarchy, such *imperium in imperio* to exist? What can prevent all these great rivers, when they shall have swallowed up all the

little rivulets, flowing into the other, and forming a torrent altogether irresistible to the government itself? If railways are to merge one into the other in this way, we prefer by far that they should be under the control of a responsible body as the government, than under parties who, like directors, are, by their acts of parliament, irresponsible both to the shareholders and to the public for whatever they do in their administrative capacity. We do not say or imagine that any of the present railway directors would abuse their powers. We do not believe they would, though there are one or two boards not over remarkable for their honor and good faith. But are these gentlemen, like Gulliver's Strulbugs (we believe they are called,) destined to live forever? and if they are not, what security have we that the future will be like the present?—Let us take for example, one district, the Manchester and Leeds, and suppose that falls into the hands of parties who may take it into their heads, as the Garnkirk and Glasgow directors once did, to put the screw on, in what state should we be? The whole of the manufacturing districts would be almost as bad as if they were surrounded and cut off from us by an enemy's army. The welfare of the three kingdoms, and of 26, perhaps then of 30 millions of people, would be at the mercy of a few irresponsible petty monarchs, sitting in a board room at Manchester, for years, until new lines could be granted and made. From the possibility of these evils we call on the government, while it has the power to relieve us, and to put an end to those extensive combinations which are not more injurious to the welfare of the country, than they are to the permanent welfare of the shareholders.

We shall probably return to this subject.

Incrustation of Boilers.

We find in the London Railway Chronicle, of the 14th of March, the following statement of Dr. Ritterbrandt, made to the Society of Arts on the 4th, in relation to the cleansing of steam boilers. The experience of Mr. Gooch, on the Southampton railway, will probably induce a trial by others.

The report says, that

"Dr. Ritterbrandt made a further communication on the subject of the 'formation of incrustations in steam boilers, and on the means of preventing it,' and a number of interesting and valuable experiments were made, which proved, that although the muriate of ammonia effectually disintegrates the incrustation, still it does not have any injurious effect upon the boilers, whether they are of copper or iron. Mr. Gooch, of the Southampton railway, stated that he had made a number of practical experiments on locomotive engines with the ammonia, but when the subject first came under his consideration, there were two points which he was desirous of having made clear to him. The first was, that the ammonia would actually prevent the deposit; and the second was, that the application of the muriate of ammonia, when applied to cleanse the boilers did not produce any injurious effect upon the metal. Upon both of these points he is now perfectly satisfied, and has adopted the plan with all the

engines under his superintendence. The quantity of ammonia used on the Southampton railway is 1½ lb. to every 160 miles, or at the rate of 1 lb. for every 1,500 or 2,000 gallons of water. The cost of ammonia is about 3d. per lb. He had also seen a number of experiments made on the engines of steam vessels, one of which, the George the Fourth, had its boiler completely incrustated, but after the experiment had been carried on for six weeks, the boilers were perfectly clean, and the vessel afterwards steamed for twelve days without blowing off the water from the boilers. It had also been tried in a small stationary high pressure engine of eight-horse power, and working with salt water, and the same results followed; but the owner, in order to satisfy himself as to whether or not any injurious effect would be produced upon the boiler by the ammonia, put 14 lbs. of it into the boiler, and the whole of the pipes soldered up to prevent any portion of it escaping, and after three days a small quantity of the water was taken out and tested, but not the slightest trace of metal was discovered, and after about six weeks, during which time the engine had worked for fifty-eight hours, the boiler was opened, and a deposit was found to have taken place at the bottom of the boiler, but upon inspection he ascertained that it was nothing more than pure sand, which had been kept in suspension in the water during the time the engine was at work. Various other experiments were made, the whole of which proved to Mr. Gooch, that the advantages arising from the use of ammonia are very great."

Atmospheric Railway.—[The following experiments from a correspondent, with those we published a fortnight ago, startle us.—There is something behind the scenes against this scheme more formidable than we had ever anticipated. Thus, in the experiments we mentioned, (pp. 372 and 373,) 15 and 28 inches of vacuum, were applied to draw respectively, not 165½ and 254, but only 32½ and 11½ tons respectively. Our correspondent who makes the computations for us, says that they had a power of 220 tons applied to draw 36 tons. We may here by the way observe that if there was no friction or resistance from the atmosphere, every inch of vacuum would, with their tube and level road, draw 11 tons of load. According to our correspondent's observation there is a waste of power of 510 per cent. on the useful effect. We need hardly observe, that exclusive of the resistance of the atmosphere, the friction would be the same at all velocities. That was and is a law of nature, unless Brunel and Samuda have altered it. Hence, classing the experiments according to velocity, we have—

Velocities in miles per hour.	12	19½	43
Powers exerted in tons loads.	165½	220.00	254.00
Loads taken.....	32	36	11½
Ditto in resistance of atmosphere in ditto.....	3.3	9.00	44.3
Total draft in tons, exclusive of piston friction.....	35½	45.00	55.8
Ratios to powers employed..	4.70	4.90	4.53

The effect of the resistance of the atmosphere we have taken from the 5th column of our table, page 95, vol. 1, octavo series of the "Railway Magazine," supposing the front area of the carriages to 50 square feet. The very close agreement between themselves of 4.7, 4.9, 4.6, the multiples which the powers exerted are of the total loads, including resistance of road and of atmosphere in so rough a subject, show that we have got the law of the loss of power, which is about 370 per cent. on the friction of the road and resistance of the atmosphere conjoined, or 370 per cent. on the force that a locomotive would exert to draw the same loads at the same velocities in overcoming all obstacles of air and roads.

We put it to any honest man if such a system as this can ever succeed against the locomotive, let them save in other respects what they may?

Were we asked to what this enormous loss is owing, we should say, a small portion to the friction of the piston and other gearing but the main part to the friction of the air, as pointed out by Mr. Herapath, before and behind the piston. Before the piston the air cannot get fast enough away, and thereby diminishes the effect of the vacuum; and behind it cannot follow up quickly enough to exert its full pressure on the back of the piston. This being the case, it is utterly hopeless to attempt its remedy. The atmospheric scheme is and will continue to be a pretty ingenious toy, but as a commercial speculation, can only be persevered in by deliberate fraud or blind ignorance.

The promoters of this scheme, for reasons best known to themselves, will not permit either Mr. Stephenson or Mr. Herapath, or anyone competent to make experiments, to investigate the matter, and it is only by chance that we can get at any facts from which useful conclusions can be drawn. The above are by very different individuals, and at different times. Properly analyzed, we see their almost perfect coincidence in condemnation of the project.]

"The every day working of this system on the Croydon railway is worthy of attention. Facts are stubborn but instructive things. The following being a similar relation of the performances of a journey to Croydon and back a day or two ago, by the Atmospheric railway, will I hope, be interesting to you and to your readers. Results of actual working are surely the best test of the capabilities of any contrivance. In going to Croydon the train (not a special, but an ordinary one,) left Forrest Hill station, the commencement of the Atmospheric railway, at 22 minutes to 5 o'clock in the afternoon. The barometer showed 19 inches of vacuum.

"The train consisted of 9 carriages, with a somewhat light load of passengers.

"We reached Sydenham at 19½ minutes to 5—distance one mile; therefore this portion, a favorable one, was run at the rate of 24 miles an hour.

"Upon starting from Sydenham, the mercury rose to 21 inches, owing of course to the air being pumped out while waiting at that station; but in this, as in every other in-

stance when the train had proceeded some short distance from the station, the mercury sunk. It did so now to 20 inches. Reached Norwood at 11½ minutes, having left Sydenham at 14½, being at the rate of 18½ miles an hour.

"Upon starting from Norwood the mercury stood at 22½ inches. At a short run from this station, sufficient to acquire a good momentum, but not sufficient to collect any quantity of repelling atmosphere in the vacuum pipe, as shown by the barometer maintaining about the same or a little less height of mercury, occurs a gradient of 1 in 50 for a short distance over a wooden viaduct, which the train mounted with no great labor, but with a sensible diminution of speed. Under the circumstances, what else could be expected? Do not locomotives with two or three times the weight of train perform much greater exploits on the Birmingham, Manchester and Leeds, Folkestone branch, and other railways, having equally heavy and heavier gradients? The train descended the viaduct with fearful velocity; and perhaps it is the performance over this part that has given rise to the rumor that the Atmospheric can go at 70 miles per hour.

"We arrived at Croydon at 5½ minutes to 5. Thus the five miles of the Atmospheric line was traversed in 16½ minutes, or at the rate of about 18½ miles per hour.

"The stationary engine house at Croydon is situated a short distance from the station. While waiting here, the working of the station engine in pumping out the atmosphere from the pipe, was heard like the noise of the well-known sausage machine in Oxford st.

"The time occupied in going over the atmospheric portion, on returning to London, was 15½ minutes; being at the rate of 19½ miles an hour. The train was composed of only eight carriages, and the load was very light. The locomotive took the same train the rest of the distance to London in 11 minutes. This distance is about 5½ miles as opposed to the atmospheric portion of 5 miles. Therefore by locomotive power the same train was propelled at the rate of 30 miles against the rate on the Atmospheric of 20 miles per hour.

"When the train on the Atmospheric railway had got some distance from Sydenham towards London, and attained full swing of speed, a Dover train to London was seen to be in chase on the other parallel line of rails, and presently passed us—to use an illustrative expression—'like a shot;' the stoker of that train being observed as it passed to whirl his cap several times round his head, and the engineman distinctly heard, at the top of a hoarse voice, to salute us by 'holloa, atmospheric—shall I tell 'em yo're coming?'

"The Dover train consisted of twelve carriages; and we had to wait, when arrived at London, full a quarter of an hour, until that train, which had got in before us, and was heavily laden, had unloaded and got clear to make room for us.

"The following will serve to enlighten your readers more accurately with a notion of the properties of the atmospheric propulsion.

"In performing the journey over the Atmospheric line, the average height of the mercury in the barometer was somewhat more than 20 inches. I will make my calculations upon 20. The barometer, your readers are aware, measures the amount of vacuum in the pipe, or in other words, the amount of atmospheric pressure on the piston, at the rate of half a pound weight on every square inch of mercury. The pressure, therefore, on the square inch was 10 lbs, and as there are in the area of the piston (15 inches diameter) 176 square inches, it follows, (omitting fractions) the power on the piston was 1,760 lbs.; 8 lbs. being the weight that will draw a ton, by dividing 1,760 by 8, we find the number of tons 220, which the force that was applied ought to propel. That is, there was force applied sufficient to propel a train weighing 220 tons. Now, what was the weight of the train? Take the train going to Croydon, consisting of nine carriages, and say that each, with passengers, weighed 4 tons, and we have 36 tons—the weight of the Atmospheric train. Thus a power sufficient to propel a train of 220 tons was applied to one of 36 tons, and the speed attained was only 18½ miles an hour!!

"I have ascertained that the Dover train which passed the Atmospheric one in a twinkling was composed of 12 carriages, and weighed, with the locomotive and tender, about 80 tons!!—being, therefore, more than double the weight of the atmospheric train which it so easily passed. It had but one locomotive to propel it, and that one, I am told not the most efficient in the stock of the South Eastern company.

"These are facts, not theory; the results of practice, not vague speculations based on unproved principles. They confirm the statements made in your journal a fortnight ago."

Comparative Charges on Railways.

The Sheffield Mercury has an article on the comparative charges on different railways in England, which may well be read by some of our American companies—we therefore give it a place in the Journal, and ask attention to the closing paragraph:

"Comparative Charges.—We have frequently felt it a duty to point out the disadvantages under which the inhabitants of this district labor as to the cost of railway accommodation. We are gratified to perceive that something in the way of reform has been effected. Day tickets, at two-thirds the usual fare, have been issued on the Midland as well as on other lines, since the commencement of the present year. But it is worthy of remark, that the railway king was the last man to move in that direction. Whether we have by our remonstrances assisted him to adopt more sound principles of action than those which induced the man 'to kill the goose' we know not, nor is it of much importance, so long as the public reap the benefit.

"We have more than once intimated that the lines of railway over which Mr. Hudson presides are the heaviest in their charges of any in Great Britain. We are not aware of a single exception to this fact; and, in some instances, the demands made upon the public on Mr. Hudson's amalgamated lines are most

enormous. If we inquire why it is that between Bristol and York we are kept in ignorance of the fares, the answer is, because the Midland directors do not court comparison; in short, that they are ashamed of their exactions when contrasted with the fares on the other lines. We will, however, supply the deficiency in some instances; after which, if the interests of those connected with the Midland lines are brought down by competition, let them thank their own management for consequences. We have frequently expressed our disapprobation of amalgamations, and have all along insisted upon the certainty that the public would be made to pay for them. Let us see how strictly this is the fact on Mr. Hudson's lines.

The power of the railway king stretches from Bristol to York, if not from Bristol to Newcastle-upon-Tyne. We will compare his charges with those for similar distances on other lines:

	Miles.	First Class.	Second Class.
From Birmingham to Gloucester.....	53	14s. 0d.	10s. 6d.
From London to Brighton..	50½	10s. 0d.	7s. 6d.
From Gosport to Farnboro' (South-Western).....	57	10s. 0d.	7s. 6d.
From London to Watlington (London and Dover)	51	7s. 0d.	4s. 6d.
From London to Wolverton (London and Birmingham)	52½	9s. 6d.	6s. 6d.

"It will be seen that in no case in the foregoing is the excess of charge less than 40 per cent.; and from Birmingham to Gloucester, as compared with the charges on the Dover line, the fares are double what the people are paying in the south. But this is not all.—Not only do the Midland lessees of the Gloucester line charge from 40 to 100 per cent. more than on other trunk lines, but the very slowest trains on all the lines above quoted are those between Birmingham and Gloucester. Bradshaw's time table will bear us out in the last named fact.

"It may be supposed that we have been invidious in selecting one piece of railway, and that our complaint does not hold good in the main. We regret to say, whether we go west or come north of Birmingham, it is all the same. Let us first go to the western extremity of Mr. Hudson's dominions, and then come to the north. From Birmingham to Bristol, as per returns, is 90 miles; from London to Gosport, 88 miles; from London to Dover, 88 miles.

"The fares are as under:

	First Class.	Second Class.
From Birmingham to Bristol..	22s.	15s. 6d.
From London to Gosport.....	16s.	12s. 0d.
From London to Dover.....	15s.	10s. 0d.

"Here, again, the slowest travelling is between Birmingham and Bristol.

"It may now be instructive to notice how much, or rather how little, the public has to be thankful for north of Birmingham. The distance from Birmingham to Sheffield is 86 miles; the reduced fares are:

First class.....	21s.
Second class.....	14s.

"Compare these and the Bristol charges with those out of Birmingham, with which Mr. Hudson has nothing to do. You can travel the same distance on the Grand Junc-

tion line for 15s. as compared with 21s.; and in a second class for 11s. 9d. instead of 14s. In the direction of London the charges are, from Birmingham to Boxmoor—further than from Birmingham to Sheffield—1st clas, 15s. 6d.; 2d class, 11s. So much for the blessings of amalgamation.

"If we stretch further north the exactions do not lessen. South to London from Birmingham is 112½ miles; north to Leeds 113 miles—say the same distance.

"Notice the money and the time consumed in the two journeys:

	First Class.	Second Class.	Time.
From Birmingham to Leeds.	23s.	18s. 6d.	5h. 20m.
From Birmingham to London.	20s.	14s. 0d.	4h.

"It needs not a Solon to see that Mr. Hudson's policy must be short-lived as it is short-sighted. The public voice will produce the needful reforms in a short time. It would be wise to anticipate the exercise of public opinion in a matter of such vital importance to the manufacturing parts of Yorkshire, as the best and cheapest means of travelling and transit. Railway companies have responsibilities which did not belong to stage-coach proprietors. Under the old system the road was open to all, and high fares were brought down by temporary opposition; but, under the new system, the power is concentrated, and may be wielded as an injurious monopoly, unless wisely directed and for the public advantage.

Viaduct over the Ouse.—The viaduct over the Ouse is the finest piece of architecture on the Brighton railway. Uniting the picturesque and useful in a high degree, rare among modern structures, it is really a good subject for the artist's pencil. The best views of it are on the banks of the river below. It is said to be at present the largest work of its kind in England. It rests on thirty-seven arches, each of a span of 30 feet, and rising 100 feet from the water. The height of the abutments is 40 feet, its length 1,437 feet, or somewhat above a quarter of a mile. The Ouse is fed by two branches, one rising at Bantrudge farm, St. Leonard's forest, not far from the source of the Adur, and the other at Selsfield, in Worth forest, and flows through Lewes to Newhaven. It is navigable to within one hundred yards of the viaduct.

Southern, or Vicksburg and Montgomery (Ala.) Railroad.

The Savannah Republican, of 30th April, contained an interesting extract from the report of Wm. S. Bodley, Esq., upon which the editor makes the following remarks:

It is not our wish, he says, to say or do anything which might tend to draw off the attention of the people of this region from the enterprise which is now agitating them, in common with the citizens of Burke and Richmond. It is a bad rule to have "too many irons in the fire" at once. It is better for communities, as well as individuals, to select a single object and pursue with united energies. If that object is a reasonable one—if its accomplishment is practicable—success is likely to follow. Whereas, if several enterprises are undertaken simultaneously—if opin-

ions are divided, and purposes distracted, a failure in everything must be the consequence.

These general remarks we make preliminary to a statement of our views in regard to the "Southern railroad company," a representative of which is now in this city for the purpose of inducing capitalists to subscribe for the stock preparatory to its organization. This company holds a charter from the legislatures of Alabama and Mississippi, for the construction of a railroad from Montgomery, Alabama, connecting with the Vicksburg road at Jackson, Mississippi. The purpose of the originators of the enterprise, is to connect the Mississippi at Vicksburg, with the south Atlantic ports, through the railroads of Georgia. This route was alluded to in the report of the committee on internal improvements at the Memphis convention. It was also favorably noticed in the last annual message of Gov. Brown of Mississippi, and we have now before us, a very able and well reasoned report on the subject, from the pen of Judge Bodley, of Vicksburg, the gentleman before alluded to as being present in our city. From this report we glean the following facts, viz: The capital stock is \$3,000,000, but the company is allowed to organize, when \$500,000 have been subscribed. The charter is a perpetual one, and the state of Mississippi, to encourage the enterprise, has appropriated for the building of the road, the 2 per cent fund, amounting to about \$300,000, whenever an equal amount shall have been paid in or secured in the state. There are other conditions prescribed, all of which, are eminently favorable to the company and which it is unnecessary now to specify."

The following extract from the report referred to contains important facts which have been often sought, but not easily, if at all, obtained.

We are glad to see the movements in the south, in relation to the connection of the Mississippi with the Georgia railroads. It is a matter of vast importance, not only to the people of that region, but also to the business and travelling community, and still more to the United States government, in times like the present, when its gallant little army is within an enemy's territory, in the immediate vicinity of a superior force, liable to be attacked at any moment—but not destined to be beaten, if attacked. With a continuous railroad to the Mississippi, ample reinforcements and munitions might be sent to their aid if deemed necessary. We hope to hear that the work is to be commenced this year, and completed as early as possible.

We copy the following remarks, in regard to the length and uses of this road from Judge Bodley's report: he says,

"The Southern railroad will extend from Jackson, Mississippi, to Montgomery, Alabama, a direct distance of 103 miles in Mississippi, and 124 miles in Alabama, or total air line 227 miles on any probable location of the railroad.

"From Jackson it connects with the Mississippi river at Vicksburg by means of the railroad now in use.

"Eventually, it will probably have a branch to Natchez, and extensions westward from the Mississippi river towards Texas.

"At Montgomery it connects with the

Montgomery and West Point railroad, of which about 45 miles are completed and the remainder of near 45 miles principally graded and the work in active progress. It is the expectation of the managers to have it completed to West Point next year.

"From this point to the Macon and Western railroad is a distance of 53 miles. The right to construct that connection, as well as one to Columbus, and thence to intersect the Montgomery and West Point road, has been granted; and there is no doubt that in one or both these modes Montgomery will be connected with the Macon and Western railroad. This road binds together the Charleston and Savannah lines, and is within a few months of entire completion, 101 miles from Macon to Atlanta. For all practical purposes, therefore, we may consider the Southern railroad as the only wanting link in the chain to bind the Mississippi river to the Atlantic ocean, both at Charleston and Savannah.

"The distances are as follows:

From Savannah to Macon..	190½ miles, complete.
" Macon to Griffin.....	50 " "
" Griffin to West Point. 53	" chartered.
" W. Pt. to Montgomery 90	" nearly com.
" Mont'g. to Jackson..	240 " chartered.
" Jackson to Vicksburg. 46	" complete.

" Savannah to Vicksb'g. 669½ miles.

"A direct road from Macon through Columbus would reduce this distance to about 660 miles.

Charleston to Hamburg..	136 miles complete.
Augusta to Atlanta.....	173 " "
Atlanta to Griffin.....	51 " nearly complete.
Griffin to West Point....	53 " chartered.
West Pt. to Montgomery. 90	" nearly complete.
Montgomery to Jackson..	240 " chartered.
Jackson to Vicksburg....	46 " complete.

Charleston to Vicksburg.. 789 miles.

A direct road from the Georgia railroad to connect the routes, might diminish the distance to 750 miles.

"The distance from Savannah to Vicksburg may therefore be set down at 670 miles. From Charleston to Vicksburg, at 790 miles.

"The uses of this road.

"When completed and connected with the Atlantic and Mississippi termini, it reduces the time of travel from end to end to about two days. It reduces travel between Charleston and St. Louis to six days—New Orleans, three days—Galveston, five days. It brings down the time of travel between Vicksburg and Washington city to a little over four days, and New York five days. And on the completion of the Chattanooga and Nashville railroad, this will be the ordinary route of travel to Nashville, which will be reached from Vicksburg in 48 hours.

"In regard to freights, it will reduce the time of conveyance from New York to Vicksburg to about ten days, of which six days are allowed for the sea trip to Charleston and four for railroad conveyance to Vicksburg.

It will reduce insurance from at least two per cent. from New York or Boston to Vicksburg down to one per cent. or less to Charleston, and none thence to Vicksburg. If the goods be worth 50 cents a pound, this difference will pay more than half the railroad charge—leaving profit to the road.

"It will enable a merchant, whose packages are usually valuable, (much beyond 50 cents per pound on the average,) to save in direct expenditure, to have his orders promptly supplied, to maintain a large business upon comparatively light stocks, and to exclude from the western markets all merchants who shall persist in continuing the risks, delays and loss of capital by the cape of Florida route.

"It will open a direct avenue for western supplies for the interior of Alabama, Georgia and Carolina. These produce ordinarily over 1,000,000 bales of cotton per annum. If we estimate but 60 pounds of western produce to the bale, the aggregate pounds weight of this trade is sixty millions; or 30,000 tons of 2,000 pounds each.

"It gives us an interior communication between the most important highway in the world, which is not subject to the casualties of storms, wrecks, pirates or war.

"It makes the South Atlantic states, identified, as they are with us in all respects, to be neighbors to the great west: and by this means gives assurance of an equitable management of the government of the United States, by which our interests, will be protected and our prosperity promoted.

"It gives to the public force that rapidity of motion, which is the greatest element of its efficiency either to suppress insurrection or repel invasion."

"These things and more does it accomplish in its general uses. To the country in which it runs it brings navigable waters without their overflows, and commerce without hazard or interruption. To that country all times of the year are thus rendered times of commerce and travel; supplies from other places are cheapened, and its own productions can reach the market at small cost and at times to suit the owner."

The report proceeds to give an estimate of the cost and income of the work. The former is put down at \$12,000 per mile, or \$2,880,000, the latter at \$1,248,960, or, deducting expenses, at \$585,387.

Of the importance of this road, no one can for a moment doubt. That it will in time be completed, we think it highly probable, that it will be of advantage to Savannah and to the Georgia improvements in both the items of freight and travel is beyond doubt; but there is certainly no money here now to be invested at so great a distance from home.—Savannah has already expended nearly \$3,000,000 upon her own end of this line of improvements. If any money is left, prudence dictates that it should be invested in our own state, and for the development of our own resources. In endeavoring to reach too far we may lose everything. We make these remarks with the more regret, because we are convinced that the Southern railroad enterprise is one which deserves encouragement, and which under other circumstances, would receive encouragement from our people. Our columns, however, are open for any one who may differ from us in opinion, and who may desire to press the subject upon the consideration of the public.

Railroad System for Maine.

The following article on the "railroad system for Maine," is from the Portland Advertiser:

"Suppose that Maine wake up and contemplate her noble prospect, and be true to herself. The Atlantic and St. Lawrence railroad should be so located as to become a sort of grand trunk with which all our other railroads should connect as best they could. It is believed that the Montreal road may be so located, with due reference to the proper points to receive branches, and not be essentially lengthened. This would be far more than compensated by the increased accommodation, better country to be traversed, and better grade.

"Let the main trunk cross the Androscoggin at Lewiston, thence run through Winthrop and Redfield for the valley of Sandy river, and along that valley run for the forks of Dead river, and along the valley of the northwest branch of Dead river to the boundary, in a direction for the eastern branch of the river St. Francis.

"The following are some of the branches that would probably, in due time, be connected with the main trunk:

"From Bath by Brunswick, corresponding with another to connect at the same point from Rumford by Paris.

"From Gardiner by Augusta, to connect at the same point with one from Bangor by Waterville, say at or near Mount Vernon.

"Another to come in near Farmington, from one or more points up the Kennebec.

"In Massachusetts, their railroads all concentrate at one point—Boston. It would seem that our system ought to be to connect all by branches with one main line, and so, as far as practicable, to extend and equalize the advantages. In due time the Bangor branch would be extended by Frederickton to the extreme eastern point of the Nova Scotia—say to the Gut of Canso—to accommodate European emigration and travel. As to this travel, no matter between what points of Europe or North America bound—whether between England, Ireland, France or Germany and Canada, New York, Texas or California—a great point would be to choose the route having the shortest sea voyage.

"Looking ahead, it is plain that manufacturing must be the controlling business in Maine, the operatives, in a great measure, to be fed from the great west, where would be sent for a market a great proportion of the goods manufactured. The best seats for manufacturing, such as Brunswick, Lewiston, Augusta, Waterville and Rumford, would be so situated as to compete on fair terms with all other places.

"For the export and import trade between the great interior and the broad Atlantic, other places, such as Bath and Gardiner, would compete with Portland. To be sure, from its better harbor, of easy access at all seasons, Portland would hold much the superiority. At a proper time, a merchant, say at Gardiner, could put up a ship to sail for Liverpool on a set day, and at Montreal have her cargo put into the same cars to be discharged from, into the ship. If the channel

of the Kennebec can be deepened, Augusta and Hallowell could come in for a share of the great transit trade. Such will be the untold amount of exports to come out from the great interior, that Portland alone could not well accommodate it." WALDO.

"[Our correspondent above, introduced his article by a suggestion in reference to patronage by the state, of the ground part of his plan. But as that subject has never been discussed or mentioned in our paper, he will excuse us for leaving out the intimation on that head.]"

Cost of Canal Repairs.

The following table, showing the cost of repairs upon all the New York canals, since they were first opened in 1826, was prepared, we understand by Mr. Senator Denniston, chairman of the canal committee of the senate, and is a valuable document—we therefore place it on record. We take it from the remarks of Mr. Bishop Perkins, on canal superintendence, published in the Albany Atlas.

Mr. Perkins says:

"It is true that the expense of repairs on the canals for the last year has been perhaps greater than ever before, though after all not so great per mile as they have been at some former periods of time. To show this I will read from a table prepared by Mr. Denniston, the chairman of the canal committee in the senate, which I have examined and found correct."

The total annual cost of superintendence and repairs on each canal, from 1826 to 1845, inclusive, and the average cost per mile of superintendence and repairs on all the canals during the same time.

Year.	Erie and Champlain	Oswego	Cayuga & Seneca	Chemung	Crooked lake	Chenango	Genesee valley	Onondaga lake and feeder	Total.	Total average per mile.	Total miles.
1826	\$182,163								\$182,163	\$414	440
1827	232,472								232,472	522	440
1828	225,846								225,846	491	478
1829	232,931								232,931	509	500
1830	202,968								202,968	442	500
1831	168,240								168,240	361	500
1832	327,302								327,302	690	500
1833	328,585								328,585	694	537
1834	429,659								429,659	879	545
1835	392,921								392,921	745	545
1836	310,183								310,183	750	684
1837	365,406								365,406	663	642
1838	374,713								374,713	511	700
1839	297,722								297,722	547	700
1840	364,292								364,292	664	700
1841	255,687								255,687	547	700
1842	392,354								392,354	664	700
1843	371,614								371,614	664	700
1844	371,449								371,449	664	700
1845	399,094								399,094	743	700

Correspondents will oblige us by sending in their communications by Tuesday morning at latest.

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Saturday, May 16, 1846.

WANTED, the following numbers of the RAILROAD JOURNAL, to complete volumes, viz:

- No. 44 of volume four, for 1835;
- Nos. 44 and 45 of volume five, for 1836;
- No. 1 of volume six, for 1837;

Or the entire volumes of those years will be purchased at subscription price, if in good order; or the current volume will be cheerfully given in exchange for volume four or five, to any gentleman who prefers a new book to an old one; and we shall be very much obliged to those who will aid us in obtaining these numbers.

The numbers may be forwarded by mail, accompanied by a letter, stating when forwarded, and the volumes may be sent by express, or other safe conveyance, at our expense.

New Method of Mining and Constructing under Water.

The peculiar situation of an extensive coal basin on the banks of the Loire, in France, has led to the invention of a new mode of operation under water, which promises to be rich in useful results, and which we wish to make known to the profession in this country.

The coal deposit mentioned has been known for more than a century, but it has never been worked, as it is below a stratum of sand and gravel, through which the river Loire flows, and to all parts of which its waters have free access. It is evident that no pumping would suffice—the river itself must be pumped dry before the porous stratum could be penetrated. To meet this unusual case, Mr. Triger has contrived and carried into execution the plan to which we refer. A suitable iron pipe, somewhat like a smoke-stack, is sunk to the surface of the water, by means of a chamber and valves, or rather doors, at its upper end; this pipe is made air tight and connected with a condensing cylinder. Air is then forced into the vessel, and the workmen, who are previously introduced, continue the excavation, and the pipe is gradually lowered—the water being constantly kept out by the condensed air. In this manner the operations were continued until the water stratum had been penetrated, when the lower end was properly secured, the pumps, etc., removed, and the entrance opened. The mines were then accessible, and could be worked as any others at the same depth—the shaft passing through the water stratum and terminating in hard rock, was precisely in the same condition as if it had penetrated solid rock for the whole distance.

The apparent obstacle to this mode of proceeding was the danger, or even impossibility, of supporting

life under so great pressure. Experience has proved that no difficulty is to be apprehended from this source—except on their first entrance—the men are perfectly comfortable, and move and work under a pressure of two or three atmospheres, as readily as in the open air. The only change noticed is, that the voice becomes weak and the men cannot whistle. One of the laborers who was deaf, to his great surprise, found that he regained his hearing under this extraordinary pressure.

The success of M. Triger's process, has led to its adoption in Belgium, under circumstances of even greater difficulty. A few modifications have been made, such as the substitution of a wooden trunk of greater diameter than that of the iron one used in France, but the principle is the same.

It will be seen at once, that this mode of operation is superior to that by the diving bell, unless at very great depths; and, under certain circumstances, it is probable that it may supercede the use of coffer dams. For instance: a foundation has to be laid on a rocky bottom and in a rapid current, where it would be difficult to secure the tightness of a coffer dam; or in building a foundation in circumstances similar to those on the banks of the Loire. In such cases, it is highly probable that the use of condensed air would be found not only more expeditious, but far more economical.

We think this to be a matter worthy of the attention of engineers, as well as miners.

Items from the Foreign Papers.

The Destruction of the Viaduct of Barentin, on the Havre Railroad, has excited much notice. The engineer of the road, the well known Mr. Locke, is handled rather roughly by the Frenchmen, and if the statements published in the French papers are correct, we must say that he deserves rough treatment. It seems that the viaduct was built of brick—the distance of the piers from centre to centre 59 feet, and common mortar was used, although the contractors remonstrated, and offered to bear a portion of the increased expense of hydraulic cement. It is said, too, that Mr. Locke had built a viaduct in England on the same plan, and that this fell likewise. A comparison is also made between the dimensions of the Barentin and other French viaducts of undoubted stability, which certainly throws the professional skill of the English engineer into the back ground.

Investigation in Relation to Steam.—M. Regnault has been entrusted by the French academy with the investigation of the laws which regulate steam in all its relations to the steam engine. No philosopher of the present age is better prepared by previous investigations, nor more richly endowed with the necessary mental qualifications for this difficult task. The experiments have already required three years of labor, and cost 10,000 francs. The results obtained we purpose giving to our readers at our earliest convenience.

Novel Idea.—At the commencement of the works on the Liege and Namur railroad, a very imposing ceremony took place, quite different from anything to which we are accustomed in this part of the world. A very elegant silver spade, and mahogany wheelbarrow, were on the ground, and the president of the company, through Mr. Rennie, the engineer requested the inspector general of railways to break ground. After the usual amount of speeches, and a visit to the famous establishment of Seraing, near which the ceremony took place, 3000 francs were ordered by the directors to be distributed to the poor of the neighboring places. A magnificent dinner concluded the af-

fair. The donation to the poor is a novel idea—and certainly much the best part of the ceremony. We commend this to the special notice of those about to commence operations.

Railroads in France.—The Paris correspondent of the Boston Atlas writes under date of 1st inst.:

"There are now 849 miles of railroad open in France, and 1703 more conceded and in progress, of which over 200 will be completed during the present year. Adding to this the lines for which companies have petitioned the chamber, France will have in 1850, 7,310 kilometres, or about 4,000 miles of railroad completed—forming an immense net work, of which Paris is the centre. The capital will be only six hours distant from Havre, eight from Calais, seven from Lille, nine from Metz, twelve from Strasbourg and Lyons, twenty-four from Marseilles and Toulouse, twelve from Nantes, and fifteen from Bordeaux. The concessions of these roads were at first as in America, perpetual—they were soon reduced to ninety-nine years, and now speculators are willing to bear the whole expense, and surrender up the road to the state at the end of forty or fifty years."

Pennsylvania Railroad.

We find the following comparative statement in the Philadelphia Inquirer, and give it a place in the Journal, as it contains useful facts in convenient form for reference; and also because we desire to repeat what we have before said, and what has been often said by others, and more recently by the Pittsburgh Gazette, viz: that "if we presume to advise, we would recommend them to spend their means in constructing the Sunbury and Erie road, with a branch to Pittsburgh"; as, by this course, another, and the most important line of communication would be opened through Pennsylvania, with two terminations, one on lake Erie and the other on the Ohio, at Pittsburgh—thus opening a medium of communication through a region of country now wholly unaccommodated, and also between an important point on lake Erie, which has no direct and easy intercourse with Philadelphia; and which would become to Philadelphia what Buffalo is to New York. The state works, through central Pennsylvania, will meet the necessities of that region. Now let PHILADELPHIA, with her ample means, open a second line with its two termini, and let the Baltimore and Ohio railroad company open a third line, if it will, and then let Philadelphia, and Pittsburgh, and Cleveland, construct a railroad from the Ohio at Pittsburgh to lake Erie at Cleveland, and work it at the lowest rate of fare, and it needs no prophet, as we think, to foretell the results, not to Philadelphia alone, but to the entire state of Pennsylvania. What most surprises us is, that the subject is not so viewed and acted upon by the citizens of Philadelphia.

The writer in the Inquirer says, that

"The most approved locomotive engines now in use on the Reading railroad, work at an expense for motive power alone, of one mill and a half per ton per mile—the worst grade for the load being a level. Of this expense, the fuel amounts to about one-third, which is wood at \$3 per cord. The Pennsylvania railroad would very probably run through a country which could supply the engines with wood at \$1.50 per cord; this would reduce the motive power by such engines to one mill per ton per mile over a level. Every 20 feet rise in the road would cost one motive power additional—so that a road of 45 feet grades would require 3½ mills per ton per mile for motive power. To this we add for the expense of maintaining cars, which would be at the same rate on all roads, viz: 2½ mills per ton per mile.

To make a complete comparison between different roads, it would be necessary to compute the number of miles of heavy grades on each road; but for ordinary practical purposes, and without going into engineering accuracy, we presume an equal number of miles of heavy grades to exist on each road.

Pennsylvania railroad, from Pittsburgh to Philadelphia—distance, 336 miles—grades, 45 feet heaviest:

Motive power.....	Mills.	Per ton.
Cars.....	3.25	2.50

	5.75	\$1 93
The common rule is to double the working expense for toll.....	1 93	
	\$3 86	

Baltimore and Ohio road, from Pittsburgh to Baltimore—distance, 342 miles—grades, 60 feet:

Motive power.....	4.00
Cars.....	2.50

	6.50	\$3 23
Toll at an equal amount.....	2 23	
	\$4 46	

Pennsylvania road extended to Cleveland would make a distance of 466 miles—suppose grades not over 45 feet:

Motive power would cost.....	3.25
Cars.....	2.50

	5.75	\$2 68
Tolls.....	2 68	
	\$5 36	

New York and Erie railroad, extended to Cleveland, 640 miles—grades, 66 feet:

Motive power, by the same rule.....	4.30
Cars.....	2.50

	6.80	\$4 35
Doubled for tolls.....	4 35	
	\$8 70	

From Cleveland to New York by the lake and canal—distance, 714 miles:

Working rate of transportation, 5 mills per ton per mile on all these waters.....	\$3 57
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Two agency charges for transshipping at Albany and Buffalo, with drayages included, cannot be maintained under 50 cents per ton each.....	1 00
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	\$4 57
Toll to the canal, 364 miles, at the same rate as to the road, viz: 5½ mills per ton per mile.....	2 09
	\$6 66

	\$6 66
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The Pennsylvania road, extended to St. Louis, would make a distance of about 1000 miles—half the distance with grades of 45 feet, the other half with grades of 15 feet:

Motive power.....	2.5
Cars.....	2.5

	5
Doubled for toll.....	5
	\$10 00

From St. Louis to New York, by sea, the distance is 3000 miles:

The lowest rate of freight across the Atlantic in large ships, is ¼ of a cent per ton per mile, (3000 miles,) equal to.....	\$10 00
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To which must be added, for transshipping at New Orleans and for insurance, at least.....	1 50
	11 50

Time for going from St. Louis to New York by sea.....	20 days.
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For going to Philadelphia by railroad.....	4 " at 10 miles pr. hour.
Passengers would go in.....	3 " 15 " "
	2 " 20 " "

North Branch Canal.—The Danville Democrat says that the water has already been let into the upper level, and it is expected that the whole line will be in a navigable state in a few days.

Railroads and the U. States Government.

We find the following remarks, in relation to the construction of railroads in those states where the public lands are yet unsold, in the Journal of Commerce of May 6th. Of the propriety, justice and "constitutionality" of the United States government constructing, or aiding in the construction of railroads, or canals, or other works, in any of the states, which, when made, shall promote the *safety, prosperity and happiness of the people of the country*, we have never entertained a doubt; even though some of those who are deemed the wise and great men of the nation have pretended to see great danger to the constitution for the government to aid in such works. Without laying claim to any great sagacity, or research in constitutional matters, or to an extraordinary amount of patriotism, we are always inclined to watch closely those men who make great pretensions to more than an ordinary share of watchful care and affection for the constitution. They are the first to oppose or approve of measures—on constitutional grounds of course—according to circumstances; and they are always prating of their consistency!

If the United States government were to construct a line of railroad from Maine to Georgia, and thence to New Orleans, on the south and southwest; and another from Maine to Chicago, and St. Louis on the north and northwest—or contribute *one-half* the cost of a first rate road, to those companies which will construct them, and guarantee to carry the mails, and transport United States troops and munitions of war without charge, and passengers at low rates, to be regulated every five years, or oftener—thus benefitting *all*, both in peace and in war, by increased facilities for business, and at the same time the most efficient system of defence, that can be devised, for an extended frontier like ours—they would not, in our opinion, transcend the spirit, or letter either, of the constitution; but would keep more within bounds than those who use it as though it were made by Day, or Goodyear, of *India rubber*.

We hope that congress will contribute largely of the public lands in aid of railroads through the states at the west and south, where the population is sparse, and the people unable to build them. We hope also that there will not be longer delay in making an appropriation for the construction of a canal at the *Sault St. Marie*, which will allow of the passage of large vessels into lake Superior. This important work has been quite too long delayed.

The article in the Journal of Commerce is as follows, viz:

"*Local Internal Improvements.*—An important discussion has just taken place in the United States senate, on this subject, in which the extent of the power and authority of the general government over it has been defined, perhaps it may be said authoritatively.

"The veto applied to the Maysville road, and its approval by the country, determined the question that an appropriation for a local road within the limit of a particular state was unconstitutional; no power to raise revenue for such a purpose having been contemplated.

"The power to aid a local improvement through the public lands is of a different character, inasmuch as it does not involve the question of the application of revenue, but simply that of the right of a proprietor of lands, having full power over their management, to apply a part of them towards improvements which are for the benefit of the adjacent lands.

"This, in our judgment, is a legitimate and proper exercise of the power of the general government, under the clause authorizing it 'to dispose of and make all needful rules and regulations respecting the territory and other property belonging to the United States.'

"To the renewed application of this power now to such improvements, and the general acquiescence in it by the country, the movements of the Memphis convention, and the course of Mr. Calhoun in it, have contributed in no slight degree.

"A recognized friend of internal improvement to their fullest extent, even when descending from his ground and advocating sound views of the power of the government in regard to them, would have far less influence in obtaining the concurrence of the nation, than a well known opponent of the doctrine of *implied construction* would have, in taking a decisive step in favor of improvements coming within the power of Congress, and perhaps before the subject of doubt.

"Such is the tendency of the human mind. Notwithstanding, however, the manifest difference between the raising of revenue for improvements under a constitution not authorizing it, and the act of a proprietor devoting part of his land, over the deposition of which he has full power towards improvements which are to benefit the whole estate, Mr. Calhoun is charged by Mr. Niles with inconsistency in regard to the doctrine of internal improvements, because, forsooth, he has been opposed to devoting revenue to the purpose.

"To this it was triumphantly answered, that Mr. Calhoun had voted to give every alternate section to the state of Illinois to aid in building her canal, and has always done so on similar applications; thus vindicating on this subject his claim to *consistency*—a matter made of far more importance in this country than is at all necessary.

"The exercise of this power within reasonable limits, is certainly expedient, and will contribute greatly to the advantage of the west, by helping to construct avenues for their growing trade; and the east ought not to hesitate about the exercise of a power from whence not only those results will flow, but others calculated to bind us together in bonds of greater amity."

New York and Erie Railroad.

We give below the result of the legislative proceedings at Albany, upon the bill to allow this road to select the most favorable route and to build the road where it will cost the least and carry freight the cheapest. It will be seen that 107 members only, out of 128 voted upon the bill. Where were the other TWENTY ONE members? Can any one inform the friends of the road upon what important business they were absent from their seats?—Can they answer to their own consciences for this neglect of an important duty? We should like to see the reasons of each absentee set out at full length, that the public may appreciate their conduct as it merits. That they may judge of the relative importance of the *private* and *public* duties of those who assume to act

as legislators—and that a just degree of censure may be visited upon them for neglecting duties of such magnitude, of such vast importance to the business community, but especially to the southern part of the state.

Of those who openly opposed and voted against the measure, we will only say that it is very difficult for some men to feel that great public measures should be considered and acted upon without regard to individual or local interest—of others we might perhaps say that they should be excused for their errors, on the score of inability to judge between right and wrong—not so, however, with those who elected them to discharge duties so far above their comprehension, they deserve no better servants.

It will be recollected that, on the third reading and final passage of this bill, it was lost by one vote, and that vote was from this city! a motion to reconsider was made, which motion came up for consideration on Friday the 1st inst. and with the following result.

ASSEMBLY—May 1.

Mr. Cooper called for the special order, being the third reading of the general manufacturing law.

Mr. J. Young moved that this order be suspended until the vote could be taken on the bill in relation to the New York and Erie railroad. Agreed to.

The question was then taken and the house refused to reconsider by the following vote:

Ayes—Messrs. Albertson, Angle, Barton, Beach, Benedict, Blakely, Blodget, Bloss, Boughton, Boyce, Burnell, Bush, Chatfield, Chase, Clark, Coe, Collins, Cook, Cooper, Cornwell, Cost, Develin, Dorrance, C. Drake, Durfee, Ensign, Fleet, Foote, Foster, French, Fuller, Fullerton, Graves, Hall, Harris, Hayner, Haywood, Heermance, Hover, Johnson, Kingman, Lake, S. Lawrence, Low, Ludlow, Marvin, E. Marshall, O. F. Marshall, McClellan, J. Miller, Montgomery, Moore, Nolton, Philips, Pitts, Primmer, Rathbun, Rice, Rogers, Searl, W. S. Sherwood, Small, Smith, Spofford, Stevenson, Storrs, J. R. Thompson, R. R. Thompson, Tilden, Titus, Townsend, Viele, Walbridge, Ward, Wisner, Woodruff, Woodworth, Worden, A. W. Young, J. Young—80.

Noes—Messrs. Baily, Baird, Cole, R. Drake, Eysaman, Gardner, Gregory, Grinnel, Hawks, Huxton, King, N. Lawrence, Lawyer, Lewis, Liddle, Loomis, Morehouse, Oliver, Pierce, Sands, Seacord, Speaker, Stewart, Tefft, Van Burgen, Voorhees, Watson—27

So the bill was lost.

Mr. Worden moved to recommit the bill to the standing committee.

The chair said it was now too late.

Mr. Pierce asked consent to give notice of a bill in relation to the New York and Erie railroad—providing for an extension of the time to expend \$750,000.

Mr. Chatfield suggested that unanimous consent be given to refer back the petitions and papers.

Mr. Pierce thought that objectionable.

Mr. Worden explained the action of the committee on this bill.

Mr. J. Young said the chair was right. The only way to reach this matter was to suspend the rules. But he did not believe any bill could be drawn that would meet the approbation of certain gentlemen, who evidently desire to defeat the road.

Mr. Chase desired to speak, but it was objected to. Leave however was given. Mr. Chase thanked the house for standing by this bill as they had, notwithstanding the influence which has been brought to bear around this capitol to defeat this bill. It had been insinuated that the New York and Erie railroad co. had entered the field in Chemung to defeat Col. Young. It was false, and yet creatures out of the house, who crawled at the footstool of power, had gone around among members here with that story, to defeat the bill. They had succeeded and now let them take the responsibility, and he would tell them the people of the southern tier of counties would remember them.

The chair here peremptorily arrested the debate.

The house then resumed the consideration of the manufacturing law.

Pittsburg and its Lines of Communication.

Well may the editor of the Gazette ask "where is there a city possessed of more advantages, present and prospective for an immense trade?" How few at a distance duly appreciate the extent and importance of the resources of Pittsburg?

Sandy and Beaver Canal.—This very important work to Pittsburg and Pennsylvania has been too much neglected and overlooked by our citizens. In the arduous struggle for western rights, in regard to the "right of way," we have forgotten almost that another work scarcely less important to us, has been steadily and rapidly prosecuted. We would do well therefore, to turn our attention somewhat to the west, and examine the facilities for transportation, travel, and commerce, soon to be opened up by the completion of the above named work.

The western terminus of the Sandy and Beaver canal is at the town of Bolivar, on the Ohio canal, immediately on the west bank of the Tuscarawas river, in the county of Tuscarawas. Its eastern terminus is at the mouth of Little Beaver on the Ohio river about forty miles below this city. It runs through the counties of Columbiana, Carroll, and part of Stark. Its length is about fifty miles. The whole line is now under contract, and the eastern portion, from New Lisbon to the Ohio river will be finished the coming fall, probably in September. The western section, from New Lisbon to Bolivar, will be finished during next season.

This improvement runs through a fine agricultural region, and the best wheat district in Ohio, the produce of which will naturally seek a market at or through Pittsburgh. But this is not its chief recommendation. It intersects the Ohio canal at a point so far south of Cleveland, as to secure to it nearly all the trade of that great improvement south of its intersection. The principal part of the flour, wheat, bacon, pork, lard, and other produce of the rich valleys of the Muskingum and the Sciota, which are transported on the Ohio canal to Cleveland, and find a market at New York, is shipped at points south of this intersection; and when it arrives at the junction, at Bolivar, it is 288 miles nearer to Philadelphia, by this canal and the Pennsylvania main line, than it is to New York by the lakes. Add to this, that we have several weeks earlier and later navigation than the

New York line, and it is seen that a large portion of the produce of the interior of Ohio will seek a market through this city. In 1844, there were shipped on the Ohio canal, at seven ports, 275,576 barrels of flour, 1,534,075 bushels of wheat, 3,614,448 pounds of bacon and pork, 56,034 barrels of pork, and 3,462,462 pounds of lard, making in all 84,961 tons. All this produce was shipped from points south of the intersection, except that from Massillon, and a large portion of the trade of that place will naturally find an outlet by this improvement. When this canal is finished, the bulk of this immense trade will pass through Pittsburg, provided our canal commissioners pursue a liberal policy on our main line.

But this aspect of the case is not the most important one to Pittsburg. The completion of the Sandy and Beaver canal opens up Pittsburg, for the sale of her manufactures and heavy merchandize, such as groceries, etc., the whole country watered by the Ohio canal and its tributaries—a country, which for fertility of soil, rapid improvement, and ability for production of produce, and consumption of our peculiar manufactures, is not exceeded in the Union. It includes about one half of the great producing state of Ohio, and decidedly the best wheat growing section.—This trade must add greatly to our prosperity, and will place Pittsburg on a high elevation as a great produce market.

A line of steamboats will be ready to be put on this trade this fall, between Pittsburg and the outlet of this canal, as soon as water is let into the eastern section of the work, and when the whole line is finished, we predict more produce will arrive at Pittsburg from that quarter than from any other at present open to us.

Here let us pause a moment and survey the various lines of communication radiating to this point, pouring their crude materials and produce into our lap, and carrying off our manufactures and merchandize. On the east we have our main line of improvement extending to Philadelphia. On the southeast the Monongahela slack water navigation, bringing to our doors the produce of that rich valley, and connecting us with the National road and with Baltimore. To this we expect soon to add the Pittsburg and Connellsville railroad. On the southwest we have the Ohio river, on which ply hundreds of steamboats, and connect us intimately with all the country watered by the great rivers of the west. On the west, the Sandy and Beaver canal will soon connect us with the rich counties of the interior of Ohio. On the northwest, the Cross-cut canal connects us with the Western Reserve and with Cleveland. On the north, we have the Erie extension, connecting us with our northwestern counties and with Erie, and on the northeast, the Allegheny river, the trade of which is all ours, supplies us with lumber and staves and pig metal, and carries off in return our manufactures and merchandize of all descriptions.

Taken as a whole, where is there a city possessed of more advantages, present and

prospective, for an immense trade? Where is there one which commands a wider extent of country, the resources of which are only partly developed? We could enlarge much here, did room permit, but we must forbear. We may say, however, that few persons abroad are aware of the extent and resources of the country of which Pittsburg is the centre, and which will inevitably make this one of the chief interior cities of the Union—not only in manufactures but in commerce. As to manufactures, take every thing into consideration, her position is unrivalled in this country or any other.

We ask the privilege of endorsing the sentiments contained in the following well expressed paragraph from the pen of the accomplished editor of the Philadelphia U. S. Gazette.

"FULTON.—A correspondent of the N. York Gazette earnestly recommends to the public the duty of erecting a statue to Robert Fulton. It is a good idea—Fulton's services deserve such a memorial. But besides being a man of genius and patriotism, Fulton was a husband and a father, and had all the good feelings that belong to those important relations. A bill has been before congress for many years, appropriating a small sum to pay to the heirs of Fulton a sum honestly due to that great man. Let that debt be paid. Let the nation erect that monument of its own justice. Let the bread be first given, and then the stone."

The Approaching Exhibition of American Manufactures at Washington begins to attract general attention, and we are glad to see that the Virginia papers are stirring up the citizens of the old dominion to send some of the products of their industry, that she too may be represented in the grand convention of American manufactures!

The Philadelphia U. S. Gazette, in connection with this movement, recalls the following historical incident:

"Many years since, at one of the early exhibitions of the Franklin Institute, an elderly gentleman of dignified appearance, and remarkable simplicity of manners, was seen moving slowly through the several rooms and examining articles of beauty and with great care. Here was a quantity of printed calicoes from Rhode Island, there samples of beautiful sheeting from Massachusetts, broadcloths of great delicacy, blankets, and other cotton and woolen fabrics inviting his applause. He looked at and admired the well finished cutlery, and the rich silver ware that decked the central table. Everywhere his eye detected something to approve. It was pleasant to see the interest which the venerable stranger manifested in all he saw. At length his eye caught a label on something laid almost out of view. He stepped rapidly forward, took up the article, lifted the pendant paper, and read, 'Manufactured by Richmond, Virginia.' A tear dropped from the eye of the venerable man, as he read the last word. It seemed to be a feeling of pride, and not of grief, that moved him.

"Who is that old gentleman?" asked a person who had observed his emotion.

"That," said the attendant, as he lifted his hat, 'is Chief Justice MARSHALL.'

Chief Justice Marshall was an American—a whole American—and nothing but an American; but he loved old Virginia, and he felt proud to see her taking a step towards her true place in the cause of national independence.

The Southern Railroad Company.—Attention is called to the notice of the opening of the books for subscriptions to the capital stock of this company, which will be found among our advertisements.—This road is to connect the Mississippi at Vicksburg with the Alabama at Montgomery, and thus, with the roads already completed and in progress, to open an uninterrupted communication between the Mississippi and the southern Atlantic cities, through the heart of the great cotton region. We hope to be able to present the merits of this great enterprise more fully hereafter.—*Charleston Mercury*.

Railroad Incident.—A young fellow travelling in one of the counties in England, found that the only passenger in a first class car was a beautiful young lady, with whom he was quite smitten, and to whom he made himself very agreeable during the travel. Not being able to ascertain her name, he presumed to steal a kiss; and when the car arrived at Birmingham she gave the gentleman in charge of the police, and made a complaint against him for the assault,—precisely the thing he wanted. He learned her name and address—paid the fine—adopted means to be introduced—pleaded his suit—and was finally accepted by the lady, after a courtship commencing in a manner so very singular. The Hereford Times vouches for the truth of this anecdote.

Reduction of Fare.—It will be seen that a material reduction in the rates of travel has been made on the Baltimore and Susquehanna railroad. Passengers are now conveyed between Baltimore and York, Pa., a distance of sixty miles, for \$1.50, in three hours and a half; and to other portions of the road at proportionable rates. We doubt not that the reduction will be followed, as it has been in all similar cases, by an increase of travel and an increase of profits.—*Balt. Am.*

Fare to the National Fair.—While every one seems ready to admit that it would be proper to reduce the charges for travel on the railroads between New York and Washington, during the approaching great national fair, we are not apprised that any positive movement on the subject has been made towards effecting the object. We recur to the matter again, in the hope that speedy and definite favorable action may be taken by the railroad companies in reference to it. The rates suggested a few days since—ten dollars for the trip from New York to Washington and back, six dollars from and back to Philadelphia, and two dollars from and back to Baltimore—would set additional thousands in motion, and add materially to the revenues of the railroad companies.—*Balt. Am.*

Montreal Railroad.—We are happy to announce to our readers that a convention has been entered into by the St. Lawrence and Atlantic railroad companies, by which it is agreed that the St. Lawrence terminus of the road shall be on a wharf extending to the navigable waters of the St. Lawrence opposite Montreal, and the Atlantic terminus shall be on a wharf extending to the navigable waters of Portland harbor. The work is to be commenced without delay, and to be completed within a stipulated time.—It is settled that the road shall be of one uniform construction, and be built on the same plan or system. It provides a mode of determining the point of junction and connection at the boundary of Canada, and stipulates within what time the road shall be completed. It provides for a uniform system of management and operation, and regulates the mode of adjusting amicably all differences that may possibly arise between the two companies.—*Port. Adv.*

Canada Railroads.—The application for a renewal of the forfeited charter of the company that proposed to build a railroad from opposite Buffalo to Detroit, has been rejected in the Canada parliament. The Hamilton company have succeeded in obtaining a charter to carry their road from Detroit river, and from Hamilton to Toronto. These results are highly favorable to the project of an extension of the Lockport and Niagara Falls railroad to Rochester or Batavia. It must tend to give it a new impetus.—*Niagara Dem.*

Danville Affairs.—Eight Hundred Tons per month.—During the month of April, the rolling mill of the Montour iron company, at this place, made and finished eight hundred tons of railroad iron. As the water is coming into the North Branch canal, and the other divisions of the public works are now in navigable order, in a short time the several thousand tons of iron made at Danville during the past winter, will be forwarded to tide water, and thence eastward. Could the iron, lumber and produce travel of this region take the Pottsville route, the Reading railroad would find an increase of business which, perhaps, they could not now accommodate, but which they might attend to with interest, when the Schuylkill canal is widened.

The Pittsburg papers contain a notice announcing that books of subscription to the Pittsburg and Connellville railroad are about to be opened, and the Pittsburg Chronicle, alluding to the subject, says:

"Our citizens can then show the amount of interest which they feel in a railroad connection with Baltimore. The charter of this road authorizes it to be constructed to the state line. We need not wait until July, 1847, before we commence a railroad towards Baltimore."

This is the bill which is intended as a substitute for the right of way, and which was smuggled through at the close of the session.—*Philadelphia Inquirer*.

Wiconisco Canal and Lykens Valley Railroad.—The Halifax (Dauphin county) Herald, has the following information in regard to these improvements:

"The contractors have about finished their work on the Wiconisco canal. The company have some repairs and alterations yet to make before the water will be let in, all of which may be done in two months—when the citizens residing along the line will, after so many suspensions and hope deferred, realize their wishes.

"The Lykens Valley railroad company have nearly completed their arrangements for the immediate construction of this road. A full corps of engineers are busily engaged in locating it, and timber, iron and locomotives have been contracted for. It is expected that the road will be completed in the early part of the fall."

Plank Road.—The work on the plank road between Salina and Central Square has been commenced in earnest. Two sections of the road are already completed, and the whole, it is expected, will be finished by the first day of July. All who are acquainted with the road between those places will rejoice to know that such an improvement is so near completion. The specimens finished are excellent. It has been contemplated to lay down another track; but our opinion is, that one will be quite sufficient, and that a saving may be made by reserving the materials provided for that purpose to repair the present track when needed.—*Black River Jour., May 5.*

Wanton Mischief.—Some miscreant threw a piece of iron into the driving wheels of the Montour rolling mill, on Wednesday night, when the machinery was in motion. The concussion produced was frightful to all hands in the mill. The engineer stopped the engine, and the lump of iron was taken out of the wheel, without having broken any of the machinery. Fifty dollars reward is offered by the proprietors, to any person who can find out who the villain is that thus endangered the lives of the hands and attempted to break the works.

The Illinois and Michigan Canal.—The trustees will remain until Thursday, completing the preliminary arrangement, preparatory to putting the entire work, including the feeders, under contract, and to receive from the guarantors of the delinquent Illinois subscribers to that loan, the instalment due upon such subscriptions and remaining unpaid.

The present quarterly estimate due contractors for work amounts to \$127,000, which will be paid on Friday. We learn that the board have decided to make 60 day payments hereafter, instead of 90 as heretofore, as the work progresses.

Capt. Smith and Mr. Leavitt express themselves pleased with the situation and progress of the work, under its present efficient charge in the engineer department; and it is confidently anticipated that the fine will be in navigable order on the 4th of July, 1847.*

Capt. Smith and Mr. Leavitt leave for the east on Thursday, previous to which time a decision will be made by the board relative to the feeders.—*Chicago Journal, April 28.*

*Notwithstanding this assertion, we learn that contracts are outstanding for the completion of different portions of the canal, including some locks, in September, 1847; and that the water cannot be let into the canal till after that period.—*Journal of Commerce*.

THE WESTERN AND ATLANTIC Railroad.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur and Tusculumbia, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.

Atlanta, Georgia, April 16th, 1846.

RAILROAD IRON—500 TONST RAILS
—60 lbs. to the yard. Depth of rail, 3½ inches; width of base 4 inches; width of top, 2½ inches; length of bars 15 and 17½ feet. Apply to,

A Steam Pile Driver—built by "Dunham & Co."—in complete order; has never been used, and for sale a bargain. Cost originally \$5,000. Also 12 Railway Passenger Cars, that have never been used which will be sold a bargain.

DAVE BROOKS & CO.,
39 Wall street

April 11.

TO LOCOMOTIVE AND MARINE ENGINE Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Boilers, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufacture and for sale by

MORRIS TASKER & MORRIS,

Warehouse S. E. corner 3d and Walnut Sts., Philadelphia.

LAWRENCE'S ROSENDALE HYDRAULIC CEMENT. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Floors and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by

JOHN W. LAWRENCE,

142 Front street, New York.

Orders for the above will be received and promptly attended to at this office.

A. & G. RALSTON & CO., NO. 4
South Front St., Philadelphia, Pa.

Have now on hand, for sale, Railroad Iron, viz: 180 tons 2½ x ½ inch Flat Punched Rails, 20 ft. long. 25 " 2½ x ½ " Flange Iron Rails. 75 " 1 x ½ " Flat Punched Bars for Drafts in Mines. A full assortment of Railroad Spikes, Boat and Ship Spikes. They are prepared to execute orders for every description of Railroad Iron and Fixtures.

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, Agent,
Albany Iron and Nail Works,

LEXINGTON AND OHIO RAILROAD.

Trains leave Lexington for Frankfort daily, at 5 o'clock a.m., and 2 p.m.

Trains leave Frankfort for Lexington daily, at 6 o'clock a.m. and 2 p.m. Distance, 28 miles. Fare \$1.25.

On Sunday but one train, 5 o'clock a.m. from Lexington, and 2 o'clock p.m. from Frankfort.

The winter arrangement (after 15th September to 15th March) is 6 o'clock a.m. from Lexington, and ma. 9, from Frankfort, other hours as above.

351y

STEPHENS' RULING AND MECHANICAL Drawing Ink, for Engineers, Artists and Designers. This article will be found superior to the best Indian Ink for the above purposes. It does not smear with India rubber or wash off with water. It flows freely from the drawing pen, and never corrodes or encrusts it. It may be used on a plate or slab, with a camel's hair brush, diluting it with water, or thickening it by drying, as required. It has the advantage of being ready for immediate use.

Sold in conical-shaped bottles, convenient for using from, without any stand, at 15 cents each.

ALSO,

STEPHEN'S WRITING FLUIDS.

These compositions, which have so remarkably extended the use of the STEEL PEN, are brought to great perfection, being more easy to write with, more durable, and in every respect preferable to the ordinary ink. In warm climates they have become essential.

They consist of a Blue Fluid, changing into an intense Black color.

A Patent Unchangeable Blue Fluid, remaining a deep Blue color.

A Superior Blue Ink of the common character, but more fluid.

A brilliant Carmine Red, for Contrast Writing.

A Carbonaceous Record Ink, which writes instantly black, and being proof against Chemical Agents, is most valuable in the prevention of frauds.

Also, a new kind of MARKING INK for Linen and Inkstands adapted for, preserving Ink from evaporation and dust.

Sold in Bottles of various sizes, by all Stationers and Booksellers.

Be sure to ask for Stephens' Writing Fluid.

N. B.—These unchangeable Blue Fluids are Patent Articles; the public are therefore cautioned against imitations, which are infringements, to sell or use which is illegal.

Stephens' Select Steel Pens.

The utmost possible care having been bestowed upon the manufacture of these articles, so as to procure the highest finish, they can be confidently recommended, both for flexibility and durability.

All the above articles are prepared by Henry Stephens, the inventor, No. 54 Stamford-street, Blackfriars road, London, and sold by Booksellers and Stationers in bottles of various sizes, and may be had wholesale from the agents in Boston, New York, Philadelphia, Baltimore, Washington, Charleston, New Orleans, and St. Louis.

Wm. W. Rose, Wall-street, New York; is my general agent in the United States.

VALUABLE PROPERTY ON THE MILL

Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 ft. with lathes, work benches, Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side of Parker st., containing 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & Co., Philadelphia.

RICH & CO'S IMPROVED PATENT SALAMANDER SAFES.—Warranted free from dampness, as well as fire and thief proof.

Particular attention is invited to the following certificates, which speak for themselves:

TEST No. 10.

Certificate from Mr. Silas C. Field, of Vicksburg, Mississippi.

On the morning of the 14th ult., the store owned and occupied by me in this city, was, with its contents, entirely consumed by fire. My stock of goods consisted of oil, resin, lard, pork, sugar, molasses, liquors, and other articles of a combustible nature, in the midst of which was one of Rich's Improved Patent Salamander Safes, which I purchased last October of Mr. Isaac Bridge, New Orleans, and which contained my books and papers. This safe was red hot, and did not cool sufficiently to be opened until 16 hours after it was taken from the ruins. At the expiration of that time it was unlocked, when its contents proved to be entirely uninjured, and not even discolored. I deem this test sufficient to show that the high reputation enjoyed by Rich's Safes is well merited.

S. C. FIELD.

Vicksburg, Miss., March 9th, 1846.

Certificate from Judge Battaile, of Benton, Mississippi.

In October last I purchased one of Rich's Improved Salamander Safes, which was in the fire at the burning of my law office, and several adjoining buildings in this place, on the 17th of November last, at about half-past one o'clock A. M. of that day. The building was entirely consumed; and I take pleasure in stating that my papers in said safe were preserved without injury. A receipt book which was in said safe, had the glue drawn out of its leather back by the heat, and the back broken; but the leaves of the book, and the writing thereon, were entirely uninjured; and some of the writing which was of blue ink, was also left wholly uneffaced and not in the least faded. Said safe was by the fire heated perfectly red hot, and I do not hesitate to say, that said safe is a perfect security against fire. But the safe tumbled over during the fire, and being heated red hot, the outer sheeting of the door became pressed in, and the bolts of the lock bent, so that it could not be unlocked, and I had to have it broken open.

JOHN BATTAILLE.

Benton, Miss., December 27, 1845.

Still other Tests in the Great Fire of July 19, 1845.

The undersigned purchased of A. S. Martin, No. 138½ Water street, one of Rich's Improved Patent Salamander Safes, which was in our store, No. 54 Exchange place. The store was entirely consumed in the great conflagration on the morning of the 19th inst. The safe was taken from the ruins 52 hours after, and on opening it, the books and papers were found entirely uninjured by fire, and only slightly wet—the leather on some of the books was perched by the extreme heat.

(Signed.)

RICHARDS & CRONKHITE.

New York, 21st July, 1845.

One of Rich's Improved Salamander Safes, which I purchased on the 2d of June last of A. S. Marvin, 138½ Water street, agent for the manufacturer, was exposed to the most intense heat during the late dreadful conflagration. The store which I occupied, No. 46 Broad street, was entirely consumed; the safe fell from the 2d story, about 15 feet, into the cellar, and remained there 14 hours, and when found, I am told, and from its appearance afterwards, should judge that it had been heated to a red heat. On opening it, the books and papers were found not to have been touched by fire. I deem this ordeal sufficient to confirm fully the reputation that Rich's safe has already obtained for preserving its contents against all hazards.

(Signed.)

WM. BLOODGOOD.

New York, 21st July, 1845.

The above safes are finished in the neatest manner, and can be made to order at short notice, of any size and pattern, and fitted to contain plate, jewelry, etc. Prices from \$50 to \$500 each. For sale by

A. S. MARVIN, General Agent,
138½ Water st., N. Y.

Also by Isaac Bridge, 76 Magazine street, New Orleans.

Also by Lewis M. Hatch, 120 Meeting street, Charleston, S. C.

16 d

BOSTON AND ALBANY.—WESTERN RAILROAD.—Fare Reduced.

1846. Spring Arrangement. 1846
Commencing April 1st.

Passenger trains leave daily, Sundays excepted—

Boston 7½ p. m. and 4 p. m. for Albany.

Albany 6½ " and 2½ " for Boston.

Springfield 7 " and 1 " for Albany.

Springfield 7 " and 1½ " for Boston.

Boston, Albany and Troy:

Leave Boston at 7½ a. m., arrive at Springfield at 12 m., dine, leave at 1 p. m., and reach Albany at 6½ p. m.

Leave Boston at 4 p. m., arrive at Springfield at 8 p. m., lodge, leave next morning at 7, and arrive at Albany at 12½ m.

Leave Albany at 6½ a. m., arrive at Springfield at 1 m., dine, leave at 1½ p. m., and arrive at Boston at 6½ p. m.

Leave Albany at 2½ p. m., arrive at Springfield at 8½ p. m., lodge, leave next morning at 7, and arrive at Boston at 12 m.

The trains of the Troy and Greenbush railroad connect with all the above trains at Greenbush.

Fare from Boston to Albany, \$5; fare from Springfield to Boston or Albany, \$2 75.

Boston and New York, via Springfield: Passengers leaving Boston at 4 p. m., arrive in Springfield at 8 p. m., proceed directly to Hartford and New Haven, and thence by steamers to New York, arriving at 5 o'clock a. m.

For Buffalo: the trains for Buffalo leave Albany at 7½ a. m. and 7 p. m., arriving at Buffalo at 8 a. m. and 8 p. m. next day. Returning, arrive at Albany at 4 a. m. and 4 p. m.

New York and Boston, via Albany: the trains from Boston arrive at Albany in season for the 7 o'clock boats to New York. Returning, the boats, leaving New York at 5 and 7 p. m., reach Albany at 5 a. m., in ample season for the morning trains to Boston. Steamboats also leave Albany at 7 a. m. and 5 p. m. and stop at the usual landing places upon the river.

The trains of the Springfield, Hartford and New Haven railroad, connect at Springfield, and passengers from Albany or Boston proceed directly on to Hartford and New Haven.

Montreal: through tickets to Montreal may be obtained in Boston, by which passengers may proceed to Troy, and thence by stage via Chester, Elizabeth, etc., and in the season of navigation by canal to Whitehall, and thence by the splendid steamers of Lake Champlain to St. John, via Burlington, and thence by railroad and steamers to Montreal.

The trains of the Hudson and Berkshire railroad connect at Chatham and State Line.

The Housatonic railroad connects at State Line. The trains of the Connecticut River railroad connect at Springfield, and passengers may proceed without delay to Northampton, and thence by stage to Greenfield, Brattleboro, Bellows Falls, Hanover, Haverhill, etc.

Stages leave West Brookfield for Ware, Endfield, New Baintree and Hardwick; also leave Palmer for Three Rivers, Belchertown, Amherst, Ware and Monson; Pittsfield for North and South Adams, Williamstown, Lebanon Springs, etc.

Merchandise trains run daily (Sundays excepted) between Boston, Albany, Troy, Hudson, Northampton, Hartford, etc.

For further information apply to C. A. Read, agent, 27 State street, Boston, or to S. Witt, agent, Albany.

JAMES BARNES,
Superintendent and Engineer.

Western Railroad Office,
Springfield, April 1, 1846. } 14 1y

MANUFACTURE OF PATENT WIRE

Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by
JOHN A. ROEBLING, Civil Engineer,
Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railroad, has now run 4 seasons, and is still in good condition. 2v19 1y

BACK VOLUMES OF THE RAILROAD

JOURNAL for sale at the office, No. 23 Chambers street.

RAILROAD IRON.—The subscriber having taken contracts for all the Railroad Iron he can manufacture at his Iron Works at Trenton, until July next, will gladly receive orders for any quantity to be delivered after that time, not exceeding thirty tons per day. Also has on hand and will make to order Bar Iron, Braziers' Rods, Wire Rods and Iron Wires of all sizes, warranted of the best quality. Also manufactures and has on hand Refined American Isinglass, warranted equal in strength to the Russian. Also on hand a constant supply of Glue, Neats' Oil, &c. &c.

PETER COOPER, 17 Burling Slip.
New York, January 23d, 1846. 1y 10

C. J. F. BINNEY,
GENERAL COMMISSION MERCHANT
and Agent for Coal, and also Iron Manufactures, etc.

No. 1 CITY WHARF, Boston.

Advances made on Consignments.

Refer to Amos Binney, Boston.

Grant & Stone,

Brown, Earl & Erringer, } Philadelphia.

Weld & Seaver, Baltimore.

December 8, 1845.

1m 50

SCRIBNER'S ENGINEERS' AND MECHANICS' Companion. For sale at this office. Price \$1.50.

LARD OIL FOR MACHINERY, ETC.—Winter pressed, cleansed from gum, and manufactured expressly for engines and machinery of all kinds, railroads, steamboats, woollen and other manufactures, and for burning in any lamp without clogging the wick. Engineers of railroads and others who have used this oil, and to whom reference can be made, give it preference over the best sperm for its durability, and not requiring to be cleaned off like that, and costing about two-thirds the price. For sale by the barrel, and samples can be sent for trial, by addressing

C. J. F. BINNEY,
Agent for the Manufacturer,
Boston, Mass.



No 23 Pear street, below Walnut,
near Third, Philadelphia.

KITE'S PATENT SAFETY BEAM.

MESSERS. EDITORS.—As your Journal is devoted to the benefit of the public in general I feel desirous to communicate to you for publication the following circumstance of no inconsiderable importance, which occurred some few days since on the Philadelphia, Wilmington and Baltimore railroad.

On the passage of the evening train of cars from Philadelphia to this city, an axle of our large 8 wheeled passenger car was broken, but from the particular plan of the construction, the accident was entirely unknown to any of the passengers, or, in fact, to the conductor himself, until the train, (as was supposed from some circumstances attending the case,) had passed several miles in advance of the place where the accident occurred, whereas had the car been constructed on the common plan the same kind of accident would unavoidably have much injured it, perhaps thrown the whole train off the track, and seriously injured, if not killed many of the passengers.

Wilmington, Del., Sept. 23, 1840.

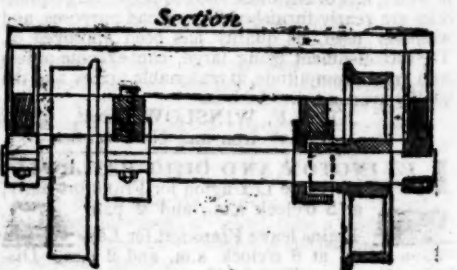
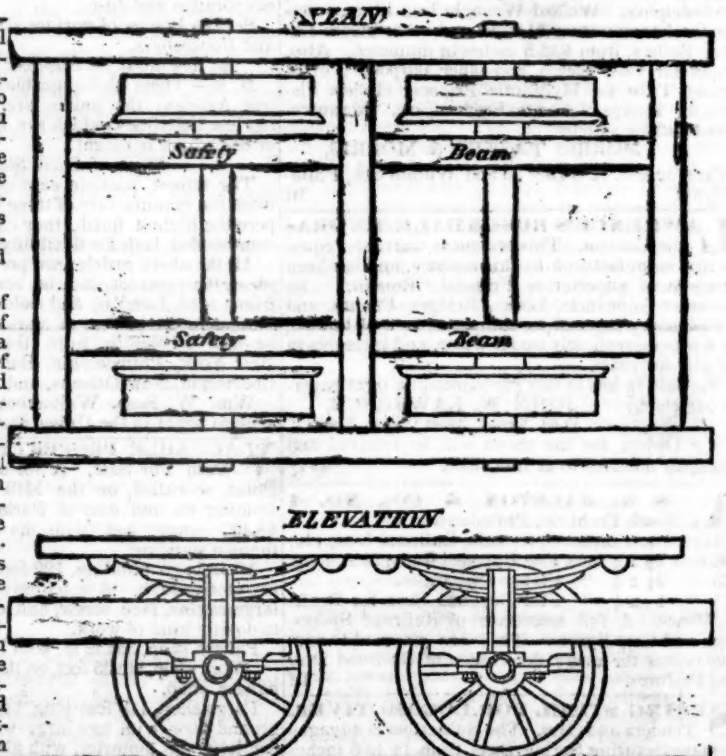
The undersigned takes pleasure in attesting to the value of Mr. Joseph S. Kite's invention of the Safety Beam Axle and Hub for railroad cars. They have for some time been applied to passenger cars on this road, and experience has tested that they fully accomplish the object intended. Several instances of the fracture of axles have occurred, and in such the cars have uniformly run the whole distance with entire safety. Had not this invention been used, serious accidents must have occurred.

In short, we consider Mr. Kite's invention as completely successful in securing the safety of property and lives in railroad travelling, and should be used on all railroads in the country.

JOHN FRAZER, Agent,

GEORGE CRAIG, Superintendent,

A model of the above improvement is to be seen at the New Jersey railroad and transportation office, No. 1 Hanover st., N. York.



PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. **JOHN F. WINSLOW, Agent.**

Albany Iron and Nail Works, Troy, N. Y. The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Eting, Philadelphia; Wm. E. Coffin & Co., Boston. ja45

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York, will be punctually attended to.

HENRY BURDEN, Agent. Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

•• Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand. ja45

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

E. A. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendent Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendent Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburg and Jackson Railroad, Vicksburg, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city or to Hinckley & Drury, Boston, will be promptly executed. **FRENCH & BAIRD.**

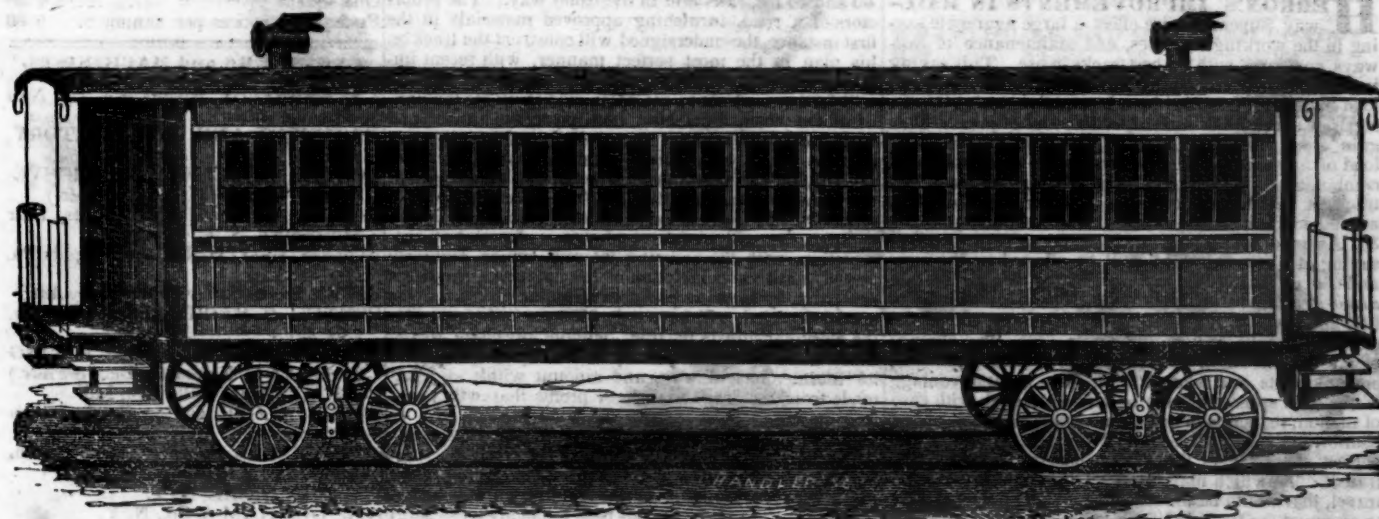
N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms. Philadelphia, Pa., April 6, 1844.

•• The letters in the figures refer to the article given in the Journal of June, 1844. ja45



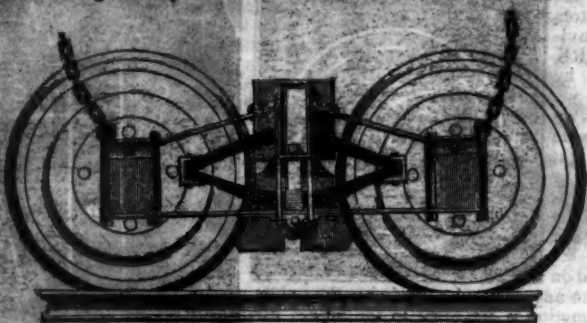
BENTLEY'S PATENT TUBULAR STEAM BOILER. The above named Boiler is similar in principle to the Locomotive boilers in use on our Railroads. This particular method was invented by Charles W. Bentley, of Baltimore, Md., who has obtained a patent for the same from the Patent Office of the United States, under date of September 1st, 1843—and they are now already in successful operation in several of our larger Hotels and Public Institutions, Colleges, Alms Houses, Hospitals and Prisons, for cooking, washing, etc.; for Bath houses, Hatters, Silk, Cotton and Woollen Dyers, Morocco dressers, Soap boilers, Tallow chandlers, Pork butchers, Glue makers, Sugar refiners, Farmers, Distillers, Cotton and Woollen mills, Warming Buildings, and for Propelling Power, etc., etc.; and thus far have given the most entire satisfaction, may be had of D. K. MINOR, 23 Chambers st. New York.

DAVENPORT & BRIDGES' CAR WORKS.



DAVENPORT & BRIDGES CONTINUE TO MANUFACTURE TO ORDER, AT THEIR WORKS, IN CAMBRIDGEPORT, MASS. Passenger and Freight Cars of every description, and of the most improved pattern. They also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices. All orders punctually executed and forwarded to any part of the country. Our Works are within fifteen minutes ride from State street, Boston—coaches pass every fifteen minutes.

RAY'S EQUALIZING RAILWAY TRUCK.—THE SUBSCRIBER HAVING RECENTLY FORMED A BUSINESS CONNECTION IN THE CITY OF NEW



York, expressly for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.

The above Truck has now been in use from one to two years on several roads a sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Secor & Co., foot of 9th street, East

river, (of which firm the subscriber was late a partner) under the immediate supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846.

W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, they have proved to be the best and most economical truck now in use.

[Signed,]

WILLIAM ROE, Supt of Power.

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845.

[Signed,] G. A. NICOLL,

Supt. Transportation, etc., Philadelphia and Reading Railroad.

To all whom it may concern:—This is to certify that the N. Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use.

[Signed,] T. L. SMITH,

Jersey City, November 4, 1845.

N. Jersey Railroad and Transp. Co.

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car. For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

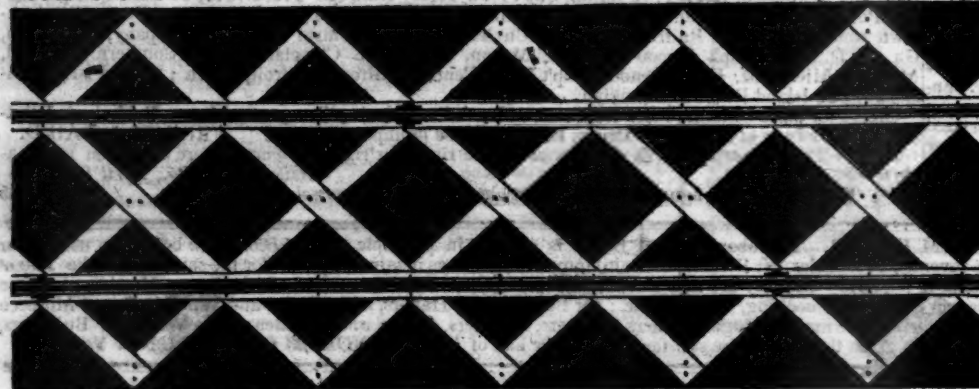
Long Island Railroad Depot,

[Signed,] JOHN LEACH,

Jamaica November 12, 1845.

Supt. Motive Power.

HERRON'S PATENT AMERICAN RAILWAY TRACK,



As seen stripped of the top ballasting

HERRON'S IMPROVEMENTS IN RAILWAY SUPERSTRUCTURE effect a large aggregate saving in the working expenses, and maintenance of railways, compared with the best tracks in use. This saving is effected—1st, Directly by the amount of the increased load that will be hauled by a locomotive, owing to the superior evenness of surface, of line and of joint. This gain alone may amount to 20 per cent. on the usual load of an engine.—2d, In consequence of the thorough combination, bracing, and large bearing surface of this track, it will be maintained in a better condition than any other track in use, at about one-third the expense.—3d, As action and reaction are equal, a corresponding saving of about two-thirds will be effected in the wear and tear of the engines and cars, by the even surface and elastic structure of the track.—4th, The great security to life, and less liability to accident or damage, should the engine or cars be thrown off the rails.—5th, The absence of jar and vibration, that shake down retaining walls, embankments and bridges.—6th, The great advantage of the high speed that may be safely attained, with ease of motion, reduction of noise, and consequently increased comfort to the traveller.—7th, The really permanent and perfect character of the Way, insuring regularity of transit. To which may be added the great increase of travel, that would be induced by the foregoing qualities to augment the revenue of the railroad.

The cost of the Patent track will depend on the quantity and cost of iron and other materials; but it will not exceed, even including the preservation of the timber, the average cost of the tracks on our principal railroads. Generally, the timber structure, fastenings and workmanship, exclusive of the cost of the iron rails, will be from \$2,300 to \$4,000 per mile. On this structure, rails of from 40 to 50 lbs. per yard, will be equal in effect to

60 and 70 lbs. rails laid in the usual way. The proprietors of a road, furnishing approved materials in the first instance, the undersigned will construct the track on his plan in the most perfect manner, with recent improvements, for one thousand dollars per mile. And he will further contract to maintain said track for the period of ten years, furnishing such preserved timber and iron fastenings as may be required, and keeping said track in perfect adjustment, under any trade not exceeding 100,000 tons per annum, or its equivalent in passenger transportation, for Two hundred dollars per mile per annum.* To insure the faithful performance of this contract, he will pledge one-fourth of the cost of construction, with the accruing interest thereon, regularly vested, until the completion of the contract. So that a company, by securing payment to the undersigned at the specified period, will have only \$750 per mile to pay for the workmanship on the track, without any charge being made for the use of the patent, the subsequent payments, for maintenance of way, and amount withheld, being made from the large margin of profits that will result from its use.

JAMES HERRON.
Civil Engineer and Patentee.

No. 277 South Tenth St., Philadelphia.
* A general average of the repairs done on six of the most successful railroads in this country, for a period of from six to eight years' use has been found to exceed \$625 per mile per annum, exclusive of renewal of rails. But few roads in this country carry as much as 100,000 tons per annum. When a road exceeds that quantity, the repairs due to the additional tonnage, up to 200,000 tons, will be charged at one mill per ton; over the latter, and not exceeding 300,000 tons, nine-tenths of a mill, etc. Where there are two tracks to maintain, a large reduction upon those rates will be made.

THE AMERICAN RAILROAD JOURNAL is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

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